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GAS JOURNAL
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Meter Connections

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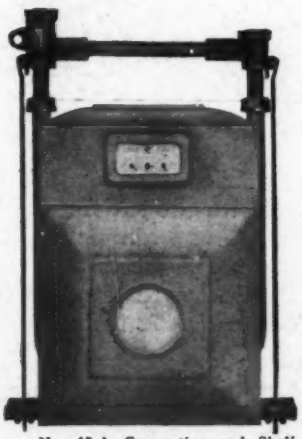

No. 45-A Connection and Shelf on Meter.

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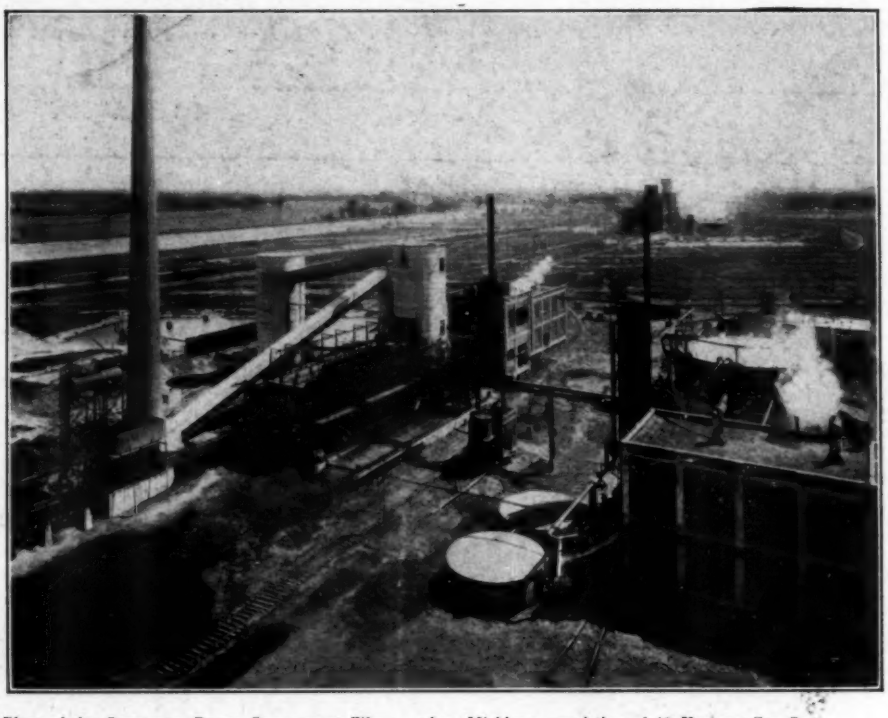

Plant of the Consumers Power Company at Zilwa ukee, Michigan, consisting of 19 Koppers Gas Ov

AT Battle Creek, Michigan and Zilwaukee, Michigan, Koppers Coal Gas Plants are proving to the satisfaction of their owners that everything claimed regarding the merits of this type of plant is more than true. Costs are lower, yields are higher and operation is smoother than ever before accomplished in coal gas manufacture. Add to this a flexibility which permits adjustment of the gas-make to meet the most exacting demand and the reason for the enthusiastic reception which this type of plant has received from the gas industry is easily understood.

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Designers and Builders of By-Product Coke and Gas Ovens

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"Forward March"—The Watchword of Gas

First General Session of Convention Held Tuesday Morning

"Forward March" is the order of the day in the gas industry, it was easily apparent when the first general session of the American Gas Association's sixth annual convention got started in the Convention Hall at the end of the Steel Pier yesterday morning.

Following a general review of the year's work which was outlined by Secretary-Manager Alexander Forward, Treasurer H. M. Brundage and President Klumpp himself. Harry C. Abell, President of the National Power and Light Company and vice-president of the Electric Bond and Share Company, was unanimously elected president of the A. G. A. for the coming year. Charles L. Holman of the Laclede Gas Light Company of St. Louis was elected vice-president. Mr. Brundage, of the Consilidated Gas Company of New York City was re-elected to the office he has held as treasurer.

Will Meet Here Again in 1925

That the convention was generally satisfied with Atlantic City as their annual gathering place was evidenced by the unquestioned approval which met the report of the Time and Place Committee for the 1925 meeting. Chairman R. B. Brown, of the Milwaukee Gas Light Company gave the report of the committee which named Atlantic City for next year's meeting and recommended the first or second week in October for the time.

The featured speakers of the first meeting were John Moody, president of Moody's Investors Service of New York City who spoke as the Accounting Section's contribution to the first session, and Miss Mary E. Dillon, only woman gas company manager in the world, holding that position in the Brooklyn Borough Gas Company, and doing her work at Coney Island, world-famous amusement center. Miss Dillon's talk was the contribution of the Publicity and Advertising Section to the programe of the general sessions.

Mr. Moody's address took up the position of gas company securities in the financial market and he noted particularly their stability and their position in the market as the representative paper of an essential industry. These points he stressed and made it clear to the convention that investor and banker alike were gradually coming to an appreciation of the value of the gas company in the security field.

"Our Only Lady Gas Man"

Miss Dillon was introduced to an audience of gas company executives numbering well into the thousands as "Our Only Lady Gas Man." It was the first time in the history of the industry that a woman has been honored with a place on the program of the general sessions of a national gas convention.

Mr. Abell, newly elected president of the A. G. A., addressed the gathering briefly, reviewing the founding of the association and predicting that he would have a hard time in himself living up to the precedent set by his predecessors in the office.

"It will be difficult," he said, "to follow through the phenomenal precedent of accomplishment which has been set for me. With the aid of the splendid staff of officers of the American Gas Association, however, I feel that there may be some success, and so I am glad to undertake the effort.

"I will endeavor, in my term as president, to inculcate the idea in committees that every man on a committee has just as much responsibility as a chairman. So that, by definitely outlining work, each man will know just what he is responsible for, how it will fit into the work of the committee and its other members and will feel himself bound to put real effort into his work. This is spectacularly different from what past committees have been when, almost invariably one or two men have done the work of the entire committee."

H. C. Abell New President

R. G. Griswold of Henry L. Doherty & Co., New York, who, as acting chairman of the Nominating Committee, placed the names of Messrs. Abell, Holman and Brundage before the convention, was ap-

plauded vociferously for his committee's selections.

W. A. Sauer, of the Peoples' Gas Light and Coke Company of Chicago, Ill., as Chairman of the Accounting Section and sectional vice-president of the A. G. A., was given the chair to introduce Mr. Moody, whose position as an outstanding authority on investments in the financial world, he pointed out to the convention.

John B. Klumpp, Retiring President

In beginning his talk Mr. Moody pointed out that the buyer of securities today was more and more the successful business who having accumulated funds sought a safe form of investment. To these successful business, he said, the gas industry must sell its securities. Recognition was coming at last that gas stocks and bonds were something to be purchased with a sense that twenty or thirty or even more years from now, they would still be worth what they were originally sold for, probably considerably more.

Mr. Moody on Gas Securities

"The man who is going to buy securities for investment today knows a few simple things about his prospective purchase," Mr. Moody pointed out. "He should be shown that the recommended stock has stability above all else. And by stability I don't mean the relatively constant value over a year but over five or ten or even more years.

"He should be shown that it is the stock of an essential industry, not that of a fad or a temporary proposition. Even the movies and automobiles cannot pass this last test with a great amount of certainty because there is no telling whether or not the movie and the auto may not be replaced in ten or twenty years, the periods for which investment securities are bought.

"But the gas industry is a permanent institution and the gas companies must teach all from the lowliest to the highest that gas is here to stay and to grow constantly.

"Not long ago I was talking to an important New York banker," Mr. Moody told the convention, "and spoke gas stocks to him along these lines.

"'Why, I wouldn't buy gas stock,' this banker said, 'I haven't used gas in my home for years, and everybody else is putting in electricity just as quickly as they can get it.'

"Now that man didn't know the gas industry, and he was a studious financier and was likely to know it if anyone was. So you see, the public must be educated to the financial worth of the gas industry and the gas industry's securities.

"The gas industry has demonstrated its stability in all times to those who have made a real study of the matter, and is deserving of real consideration by the man who is preparing to put his money into investment of some sort."

Humanizing a Gas Company

Speaking on the subject "Humanizing a Gas Company" Miss Dillon made an eloquent plea for newspaper advertising, pensions, the employment of college women in gas company home service work and the cultivation of the spirit of service in every employe from the president down to the office boy.

"I firmly believe that if the gas industry were to develop and follow a technique in dealing with its public comparable in excellence with that it now employs in the manufacture and distribution of its product the politicians who usually preach only that which is popular would find other texts to serve their purposes and our lawyers could take a well earned rest at their own expense.

"Why do so many officers and directors of utilities cheerfully pay money to their attorneys, and when an advertising man suggests an appropriation of one-tenth the amount, divide that by ten and give it with the air of one who has been greatly imposed upon?

"I have never heard it claimed that litigation led to understanding, and it is only through understand-

ing that we can secure the faith and affection of our public, the permanent basis of that much-coveted good will that we talk about. I would like to see some of our companies lay aside a fund equal to their rate expense for the past five years, and with it get properly acquainted with their public through the best kind of advertising that money can buy.

"For you have in advertising an agency that contains potentialities of usefulness in your business far beyond anything you have realized in your tentative employments of it. Adequate and intelligent use of the power of advertising will pay in dollars as it pays the merchant and the manufacturer; and in addition to that it will bring a steadiness and stability to your public relations of which you have not dreamed."

Progressiveness the Watchword

H. O. Loebell Heads Industrial Gas Section

The first meeting of the Industrial Gas Section was held in the Gold Room of the Chalfonte Hotel yesterday afternoon. Although this is quite a large room, with ample seating capacity, almost every chair was taken. The gasmen at this meeting listened to the papers attentively and the discussions were short and to the point.

The session was opened by Chairman H. H. Clark of Chicago. Mr. Clark told of the developments in the industrial field during the past year and made some prophesies for the future. He said that the makers and sellers of industrial gas were supplying about 50 per cent of the possible commercial demand, one tenth of 1 per cent. of the house heating, 70 per cent of the hotel and restaurant business and about 10 per cent of the large industrial demand. He suggested greater effort in the field and predicted that the growth and use of industrial gas in the next ten years would be greater than that of the last one hundred years.

The Nominating Committee reported H. O. Loebell and F. F. Cauley respectively as their choice for Chairman and Vice Chairman. Upon motion the Secretary cast the unanimous vote of the Section for H. O. Loebell for Chairman for the coming year and F. F. Cauley for Vice Chairman.

Mr. Loebell Elected Chairman

The Chair called on Mr. Loebell after his election and asked him to address the section. Mr.

Harry O. Loebell, new chairman, Industrial Gas Section

Loebell stated that he understood there was a clause in the By-laws of the American Gas Association to the effect that a Chairman elected by a section could be deposed by the President of the Association upon complaint of the members. Mr. Loebell thought it wise therefore to out-line his policies for the coming year and suggested that if those plans did not coincide with the views of the section there would still be time to report him to the President and have his chair vacated.

Mr. Loebell's platform was about as follows:

Raise the prestige of the section and its members before the executives of the gas companies.

Let progressiveness be the watchword of the industrial gas man.

Educate the managers and heads of gas companies as well as the consumers of industrial gas.

Mr. Loebell received hearty applause at the conclusion of his speech and there was no indication that his policies were in any way unsatisfactory to the section, in fact, it might safely be stated that H. O. Loebell will serve as Chairman during the coming year.

F. F. Cauley, the new Vice Chairman was then called upon. Mr. Cauley stated that he was much gratified at the large attendance and that it showed the interest as well as a willingness to learn and to work on the part of the delegates.

Mr. King Reports the Steel Treaters' Exhibition

A. Gordon King, Service Engineer of the Headquarters Staff was then called upon for a report of the work done at the Steel Treaters show held in Boston. Mr. King stated that the booth of the section was very attractive and the displays excellent. Many products made by the use of gas as industrial fuel were on display and many booklets, literature, etc. It was suggested that at the next show of this kind larger products be shipped and put on display, as the public attending a show of this kind and seeing only small articles, would be bound to conclude that gas was not used in the manufacture of larger products. Mr. King's report showed that many leads were gotten at the show, which when turned over to the gas companies in the proper localities resulted in worthwhile business.

The exhibit was visited by many

persons and the result was very gratifying. It was brought out however that before gas can become a great industrial fuel rates will have to be made which will compete with other fuels.

The Educational Committee Reports

The report of the Educational Committee was read by J. P. Leinroth of Newark, N. J. This report stressed the need of arousing enthusiasm of college students regarding the use of gas as fuel. It was suggested that a yearly prize be offered to the student preparing the best paper on industrial gas or the best application of gas for industrial use. It was also suggested that the section tie up with student bodies and give them at least one lecture a year on the subject. It was stated that another plan that might improve conditions would be for the gas companies to use students during the summer vacations whereever possible and to let them know that permanent positions were always open for young men who had fitted themselves to fill them.

The report of the Committee on Progress and Development was read by F. F. Cauley, Chicago, Ill. Mr. Cauley stated that wonderful progress had been made during the past year, that many new uses has been found for gas as an industrial fuel. Brick was first made by gas in November, 1923. Many improvements have been made in treating furnaces. More exhibits of gas equipment had been made at trade conventions and processes in brass melting and baking had been improved. There was also a marked change in public opinion.

The report also stressed the point that while gas use was a small part of some machines like the linotype, bottle and others, the makers of these machines should be given support and cooperation.

Frank F. Cauley. "He tells them that Industrial Gas is the thing."

Report on Booklets

C. C. Krausse, Baltimore, Md., read the report on "Ceramics." Mr. Krausse reported that the booklet on this subject would be ready in a few months and would be distributed.

"Drying," was handled by J. Zander, Chicago, Ill.

"Food Products" was thoroughly covered by D. A. Flynn, Chicago, Ill.

"Gas Is Cheaper," was reported on by J. H. Gumz, San Francisco, Cal.

A paper "Some Facts Influencing the Development of Industrial Hepburn, New York City ..s Gas," ably read by W. M. Hepburn, New York City, closed the meeting.

The discussions on each of these papers were illuminating and brought out many facts worth knowing. This meeting shows that the Industrial Gas Section is on its toes and is up and doing.

Technical Men Discuss Manufactured Gas As Aid To Natural Gas

R. C. Cornish Elected New Chairman at First Meeting of Technical Section

The main subjects of discussion at the first meeting of the Technical Section which was held yesterday afternoon on the Steel Pier at Atlantic City were the report of the Water Gas Committee, and two papers, one on the use of manufactured gas to supplement natural gas, and the other on the causes and prevention of gummy deposits in meters.

The meeting was opened by Chairman L. J. Willien, who read a report of which the following is an abstracted account.

The Chairman said that the work this year was conducted along the same lines as last year, the work being sub-divided among a number of special and standing committees. There were two new committees functioning this year, one concerned with water gas and the other with the revision of the Catcheism of Central Station Gas Engineering. The first of these committees was organized in the same manner as the Carbonization Committee and its report, which is described below, was made in the same manner as that of the older committee. The Committee of the Catechism has undertaken a revision of the Catechism, developing a new work with the old as a basis and abandoning the catechism form for the narrative form.

The Chairman called attention to the innovation of meeting in parallel sessions on Thursday afternoon and said that this would be watched with interest to determine whether or not this practice would be followed in the future.

A special plea was made by the Chairman for more young blood on the committees. He appealed to the younger men, members of the Technical Section, to enlist in committee work, and detailed some of the advantages that would accrue to them not to mention those which would rebound to the benefit of the entire technical gas fraternity. He also appealed to the members to take greater part in the discussion of papers, stating that the real value of these papers to the technical men are often brought out in the discussion.

The election of officers for the coming year resulted in the following: R. C. Cornish of the American Gas Co., of Philadelphia was elected Chairman and J. P. Haftenkamp, Rochester, N. Y., was elected Vice-Chairman.

After the election of officers Mr. Cornish was called upon for a few words and in a short talk asked for a continued cooperation of the members of the Section and of the committees in the work to be done the coming year.

Augumenting the Failing Natural Gas Supply

The first paper read at the meeting was on the "Best Type of Manufactured Gas Plant for Natural Gas Companies Required to Augument Failing Supplies of Natural Gas, which was prepared by Albert Hurlburt, Vice-President of the Equitable Gas Co., Pittsburgh, Pa. The augumenting of the failing supply of natural gas is a matter of the highest importance not only to the companies that sell natural gas but also to the gas companies who make manufactured gas. Statistics have shown that the supplies of natural gas are limited and furthermore they are by no means constant, so that when a heavy load occurs on the line it is not at all certain that the supply of the gas will be sufficient to take care of it.

In the aforementioned paper the author was not concerned with the desirability nor with the practicability of manufactured gas augumenting the supplies of natural gas. This appeared to be granted, and required no argument. What he gave his attention to was the selection of the proper type of manufactured gas plant and the conditions which affect this choice. He emphasized the fact that the local conditions would be pertinent in making this selection.

Mr. Hurlburt took up all the various phases of the problem and discussed in detail the causes of gas shortage and the failure of the supplies of natural gas. The use of natural gas in the industrial heating field and its effect on the supply of gas left for the domestic business was also gone into. Throughout the entire paper the economic phase of the problem was discussed in considerable detail, and the development was traced to the final conclusion that it was necessary to employ manufactured gas to help maintain the supply of natural gas so that every customer would receive as much gas as he wanted to use.

A description of the conditions in the natural gas industry which exist when the public demands that a manufactured gas plant be built to supply their demands was also given. The rate structure was pointed out to be also an important matter to consider when such a proposition is undertaken.

The speaker said that in Pittsburgh it was found necessary to build a plant for making blue water gas to keep up the gas supply under peak load conditions. He discussed the reasons why this was done and said that in the first place it was impossible to obtain sufficient natural gas at a reasonable cost. Then it involved the question of retaining the good will of the public by maintaining the natural gas supply sufficient for their needs. Another point that had to be considered was that the character of the manufactured gas plant had to be such that it would give the greatest output per dollar of investment. Then again the type of plant had to be such that it "was not so large but that it could all be used in the future when manufactured gas is needed, and so located that our natural

(*Continued on Page* 996)

Co-Operation the Secret of Success

Alexander Forward, Secretary-Manager, Elated Over Get Together Spirit Displayed By Rank and File

"This Convention is the inspiration, the tonic every gas man needs to help him carry on for another year," said Alexander Forward, when seen at Headquarters yesterday morning just before the opening of the General Session.

"The thing that impresses me most strongly is the willingness of both officers and members of the American Gas Association to do anything that will be helpful to the association and the industry. Conventions, as a rule, are as politic as they are constructive. The interest of self ofttimes gets the better of the spirit of one for all and all for one. Enthusiasm, Energy and Helpfulness are here in great numbers, but old man Selfishness, thank goodness, stayed at home.

"The Great War taught the men of the United States the importance of co-operation, we learned that concerted effort put over things that individual effort could not have accomplished. The lessons we

learned in those strenuous days have not been forgotten, and I am glad to note that we are applying that knowledge to our every day avocations. Our Chamber of Commerce, Rotary, Kiwanis and Advertising Clubs throughout the country did war work as a body. Now they are doing for themselves what they then did for their country and humanity. The result is that organizations, like ours, in most cases are getting better results than they did before the war.

"The American Gas Association is made up of diversified interests, yet all have the same goal posts. We want to manufacture the best gas possible, furnish service beyond criticism, and use that gas in appliance and equipment which will make the user a satisfied customer always. To do this we must work together, shoulder to shoulder, ready, at all times, to help our co-worker and to fight his battles, which in a measure are usually our own.

Our Genial Secretary Manager

"As long as the members of our Association work for the common good, we will continue to go forward and nothing can stop our progress. The gas industry has made wonderful strides in the past few years, we are doing things which were unheard of and even unthought of a few years ago. However, there are barren lands still to be cultivated, forests yet to be invaded, and seas not now charted. We have the capital, the brains and the energy to do all of these things and I believe we will continue to stay at the head of the will take home with them the essence of all the work, the papers and the discussions of the meetings.

"Every officer, director, chairman and committeeman deserves a vote of thanks for the splendid spirit they have shown, and the success of this wonderful meeting is due to their untiring efforts. The weather man has been good to us, procession.

"I sincerely trust that the delegates attending the Convention will not only enjoy the week, but the people of Atlantic City have welcomed us with open arms, a splendid program both social and business has been arranged for us and therefore the benefits we derive from the convention depends entirely upon ourselves. If we fail to avail ourselves when opportunity knocks, then we have only ourselves to blame."

Golden Ideas For Commercial Men

Section Holds First Meeting

Several hundred members of the Commercial Section at the annual convention of the A. G. A. came away from the Steel Pier toward sunset last evening with their notebooks filled and their imaginations excited. The first session of the executives and sales experts in all phases of the Gas Industry was over and they were already inspired to renewed efforts by the suggestions and demonstrations conveyed to them from both within and without the business. They had enjoyed a broadening experience meeting and were teeming with a fresh commercial fervor.

Changing the executives of the Section, at the start of the proceedings, amounted to a love feast. James P. Hanlon of Newark, the new chairman, extolled the ability of the retiring head, J. E. Davies, of Chicago, to do big things in a big way. The new chief hoped to give as good an account of his stewardship as Mr. Davies could, who had pushed the programe of the A. G. A. so far forward. The selection of Mr. Hanlon as well as the choice for Vice-Chairman of Joseph P. Myers, of Philadelphia, when reported by Alfred P. Post, of Philadelphia, as chairman of the Nominating Committee, was ratified without one dissent.

Mr. Davies Tells of Year's Work

Mr. Davies told of a great year's doings and said he could see the vision of an extraordinary future in the project of selling goodwill at a profit. To him a vital part of the programe for the Commercial Section was the selling of gas to architects and builders, which was to be promoted mainly by the special committee formed to meet the inroads made by the big electrical interests. These had crowded the files of the architects and builders with propaganda that threatened to destroy, for instance, the fireplace business of the gas companies.

The outgoing president stressed the need of making the housewife a better customer by broadening the scope of the Home Service Department. Window displays also needed the more serious attention they should receive as it became plainer than ever that they produced a considerable part of the total sales.

All the delegates, in the discussion that followed the rapid-fire chart talk given by Robert E. Ramsay, Vice-President of James F. Newcomb & Co., of New York, showed how deeply they had been impressed by the visitor's discourse

H. C. Abell, President-elect—Pres. National Power & Light Co., Vice-Pres. Electric Bond & Share Co.

C. L. Holman, Vice-President-elect. President of Laclede Gas Light Co., St. Louis, Mo.

looking to "Development of Present and New Markets." He set forth eleven points showing the intelligent or inferior appeals made to customers by retailers. Their problem so many did not understand—for example they were unaware that forty millions of Americans in gainful occupations average an earning of only $1,000 a year, these being 82 per cent of the total.

The story of a Washington bank which stimulated 3317 stagnant and unprofitable accounts to an increase of 101 per cent was one of many illustrations used by Mr. Ramsay to show how present business can be enlarged by up-to-date methods and persistent intelligence.

Window Dressing Covered

On window dressing the speaker went stronger than Mr. Davies, asserting that in some lines these were good for between 30 and 50 per cent of the sales, the top figures being reached in sections populated by the foreign born.

Nor was the telephone used enough to canvass housewives. This was proved with many specific illustrations. Home denominations were shown to be very helpful, and the speaker cited chapter and verse.

There was some mirth when Mr. Ramsay said that elaborate tests had revealed among other things that men trying to sell to women over the Bell system got very poor results as compared with women who had been fully coached by executives. As a rule, too, the retail salesman had less training than the mechanic or the bricklayer. He was merely zero as to training. This was a big problem to tackle and the gas industry ought to see that the retail salesmen in its employ received better education.

Mr. Ramsay's charts, by courtesy of various large corporations, were splendid. Mr. Jasperson, of Poughkeepsie, said he had never been strong for charts, but on these he was sold. "I am becoming a convert to charting out our sales efforts," said he.

E. J. Burke, of Indianapolis, said that if the delegates took home with them and remembered only a fraction of what they had learned this afternoon they would increase their business. Mr. Chadwell, of New York, and others who poined the discussion too late for this special edition, found some point or another of peculiar appeal to their needs.

For his topic R. J. Canniff, of the Sales Promotion Department of the Central Hudson Gas and Electric

J. E. Davies, Retriing Chairman

Company, at Poughkeepsie, N. Y., chose "The Campaign Method of Merchandising." He gave it his wholehearted approval. It was always merely an attempt to reach the peak campaign conducted every year at Christmas. But intensive commercial drives would have to be carefully co-ordinated, well timed, and acutely organized. They always yielded gold when done right. Mr. Canniff's paper was altogether admirable.

Miss Swann Addresses the Meeting

A warning that poorly cooked, hastily cooked and overcooked food is ruining the digestion of thousands of our growing children, as well as of their fathers and mothers, was sounded by Ada Bessie Swann of the Public Service Electric and Gas Company, of New Jersey. The only solution is a general movement back to the home kitchen and the family dining table, she asserted.

Miss Swann's address followed an announcement by the Association that a nation-wide campaign for the education of American women in cooking and similar branches of domestic science would be inaugurated by many of the leading gas companies of the country this winter.

"I am happy to see that the gas industry is awake to the importance of this movement," said Miss Swann. "The intimate relation of the gas company with the domestic problems of the housewife gives us a unique opportunity for increased service along these lines. Gas has freed our women from many of the burdens and most of the drudgery of housework. We are now going one step further in helping them to plan their meals and to reap the benefits of improved methods of gas utilization. Our slogan is 'less trouble and better food.'

"I am willing to predict that an increase in home cooking might easily cut in half the number of divorces and unhappy homes in this country. Too many women rush home at five minutes to six from the club or from the movies to serve a hastily prepared meal from cans or warmed over food. Others practically live on the delicatessen. Still others have formed the dining-out habit.

"The trouble is that many women either do not know how to cook or, because they are not informed of new appliances and easier methods, they dread the drudgery of preparing and planning meals. Most women would like to be praised for their cooking, but they do not have sufficient confidence in themselves owing to insufficient knowledge. Our home service departments, by lectures, radio talks, demonstrations, publicity and, not least of all, personal instruction, will do much to remedy this evil."

Miss Ada B. Swann

Gasmen Dance

Delegates Enjoy Big Affair On Steel Pier

About two thousand delegates and their ladies tripped the light, fantastic toe on the Steel Pier last night. The good looking men and beautifully gowned ladies enjoyed the first social feature of the convention to the utmost. Confrey's band of twenty pieces, a Paul Whitman unit, furnished excellent music.

The evening opened with a reception to Mr. and Mrs. Klumpp, Mr. and Mrs. Miller and Mr. and Mrs. Abell. After the delegates had been introduced to the Officers and their ladies the music started and the fox trotting gas men were off in earnest. Gray-haired men moved gracefully across the floor with bobbed haired flappers and grandmothers modestly vamped the young men.

During the evening a delicious fruit punch was served.

At a late houn a tired, but happy crowd wended its way back to the Boardwalk hotels.

Accounting Section Meets

Statistics Stressed by Every Speaker

The first meeting of the Accounting Section was held in the Vernon Room of Haddon Hall yesterday afternoon. The meeting was called to order by Chairman W. A. Sauer of Chicago, Ill., who read his report of the activities of the section during the past year.

"This section is named the Accounting Section," he said, "but the section has taken on many activities that cannot be properly classified under any definition of accounting. Some of these are relations with customers, employees' relations, and statistics.

"The subjects upon which committees have been working during the year are: customers accounting, budget and fixed capital inventory, customers relations, insurance and the uniform classification of accounts.

Statistics Are Important

"This administration has laid particular stress on the importance of statistics to the industry. We believe that the statistician is the diagnostician of the company's ailments, and that the figures and facts that can be brought forth can make for success or break an organization if ignored. Believing that few people in the gas industry have a clear idea of the statistician's work, we have made it a feature of this conference. We hope to have the recommendation adopted which the Committee on Statistics will make, namely, that a Bureau of Statistics be installed at Association Headquarters.

"Another activity to which this administration has devoted particular attention is the development of the work of the Committee on State Representatives. Representatives of this section have addressed most of the State Association meetings held during the past year and have received promises of co-operation in almost every instance. The work this committee is doing should be developed to the highest degree and should be maintained as a permanent activity of the section."

Chairman Sauer closed with a plea for better understanding of the work of the section and further co-operation between the members and any others who might be interested in the work during the coming year.

Alfred Hurlburt, Vice-Pres., Equitable Gas Co., Pittsburgh, Penna.

H. C. Davidson Elected Chairman

Vice-Chairman H. C. Davidson of New York City spoke of the splendid work of the chairman during the past year. Only a few moments later, J. W. Heins of Philadelphia as chairman of the nominating committee put Mr. Davidson's name in nomination for 1924-25 chairman and De Witt Clinton of Worcester, Mass., for vice-chairman, and the two were unanimously elected. Mr. Davidson spoke shortly in thanks for the honor the section conferred on him and promised to try to carry on the work which Chairman Sauer had started.

Mr. Klumpp, President of the A. G. A., who was present at the Accounting Section meeting, complimented the section on its display and made his remarks general for the entire exhibit. P. D. Warren of Chicago, chairman of the Exhibition Committee, also spoke of the Accounting Exhibits. There was reference to the occasion of the origin of the Accounting Section and he was enthusiastic on the development which had made itself so remarkably evident during the past year.

Chairman Sauer then introduced Floyd Parsons, who spoke on the value of statistics in all business and applied his remarks particularly to the gas industry.

H. J. LaWall of Philadelphia, Chairman of the Committee on Analysis of Gas Company Statistics, presented a report which has been printed in abstract form in the Tuesday issue of the American Gas Journal.

Major Forward was also present and further stressed statistics, dealing with their analysis. He spoke of the registration cards which had been printed for the section which would give every one an opportunity to suggest what he wanted it to do during the coming year.

B. J. Mullaney of Chicago, speaking for the Publicity and Advertising Section, spoke of the value of statistics in putting facts before the public. Heretofore, he said, statistics had been rather ancient affairs and were valueless for publicity and advertising work, but of late there had been a notable effort to make these figures of value to public information.

Mr. Mullaney was followed by a series of speakers, each of whom in turn brought out the value of statistics in their various applications to different branches of the gas industry.

The attendance, in excess of two hundred and fifty, showed a notable increase in interest, previous sessions of the section having been proud to muster as many as a hundred.

Views and Interviews

Expressions From Gas Men Of Note

A spirit of optimism seems to be prevalent among the gas men attending the convention. All of them are wearing smiling faces and are looking forward to twelve months of prosperity. The grouches and kickers have stayed at home as will be seen by the following interviews gathered by an *American Gas Journal* reporter.

Martin Insull

Martin Insull, president of the Middle West Utilities Company, which operates in fifteen states, said:

"We are looking forward to a steady improvement in general business conditions for the remainder of this year and next. I believe the business of our company during the next eighteen months will be so good that it will entirely digest all expansion programs made during the last three years."

Martin Insull

Samuel T. Bodine

"Reports which come to me from various sections of the country indicate a gradual restoration of business confidence and activity and that men's minds are coming back to normal after the distressingly abnormal conditions growing out of the Great War." Samuel T. Bodine, president of the United Gas Improvement Company of Philadelphia continued: "I do not mean by this to express a belief that we will ever again get back to pre-war costs for labor or material, but I confidently believe that we are all thinking more sanely and working more efficiently than for many years past.

"I do not consider the expansion now taking place in the manufactured gas industry as in any way phenomenal. It is running at about the same compounding percentage which has obtained since the gas men of the country, awakening from their conservation in the conduct of the commercial department of their business, put into effect modern methods of publicity to tell the public of the many ways in which gas manufactured under improved processes and utilized through improved and more efficient appliances has become a vital factor in domestic comfort and manufacturing economy."

Clare N. Stannard

Clare N. Stannard, vice-president and general manager of the Public Service Company of Colorado, predicted that the next five years hold more for the public utility than the past twenty.

"One of the greatest factors contributing to the optimism of the utility interests in this region is the very evident change in the attitude of the people toward all classes of utilities.

"Our customers are complaining less, and there is a minimum of agitation, both due largely to systematic public relations work. The demand for good public utility properties in this region and the frequency of sales is indicative of the soundness, prosperity and future progress in the industry."

Clare N. Stannard

Horace H. Clark

Horace H. Clark, of the Peoples Gas Light and Coke Company of Chicago, said: "The future growth of the gas industry will be limited only by the amount of new capital we can get to enlarge our facilities to serve the needs of our customers. The gas companies of the United

Horace H. Clark

States, in the communities in which they are now serving, are doing about fifty per cent of the possible domestic business; about one-tenth of one per cent of the house heating business where gas is the only means of heating; they are doing about seventy per cent of the commercial business, such as hotels, restaurants, newspapers and bakeries; and only ten per cent of the large industrial business."

Southwestern Public Service Association

A Four-Cornered Organization; Sect. E. N. Willis Describes the Make-Up of This Unique Association

The Southwestern Public Service Association is at least unusual, if not unique, among regional utility associations in that it includes, in a singal association, four divisions which function as a unit in all matters of common interest to the utilities and still maintain separate organizations within the association for the carrying on of such work as applies only to the individual divisions. Of the four divisions—electric light and power, electric railway, gas and telephone—none is more active than the Gas Section.

Following the federation of the Couth Central Gas Association with the Southwestern Public Service Association in 1923, the gas division, functioning under the leadership of C. B. McKinney, president Municipal Gas Company, Dallas, as vice-president; chairman of the Gas Division, made rapid steps forward and further consolidated utilities in this division in to a unit working in harmony with the Natural Gas Association of America and the American Gas Association, with both of which this Association is affiliated.

It should be noted that a very large proportion of the gas properties in this section utilize natural gas and the gas division of this Association has the problems of both the natural and the manufactured gas to meet. The Southwestern Public Service Association held is annual convention in the early summer and at the New Orleans convention in 1924, the Gas Division presented a program constructive and interesting not only to the gas men but to others. The New Orleans convention, in addition to electing a natural gas man as vice-president; chairman of the divison, in the person of F. C. Armbruster, Southwestern Gas & Electric Co., Chreveport, Louisiana, also elected a man who has gas properties to be president, in the person of G. W. Fry, West Texas Utilities Co., Abilene. The Gas

John Moody, President Moody's Investors Service

Division has continued and increased its interest in the work of the national associations and is already planning its program for the 1925 convention of the Southwestern Public Service Association, the date and place for which has not yet been selected.

An Association Composed Only of Commercial Men

J. H. Sumner Tells of the Work of the Gas Sales Association of New England

The Gas Sales Association of New England, one of the most active organizations in the gas fraternity in the United States is rather unique in its personnel inasmuch as its membership is composed of representatives of the sales organizations of gas companies and representatives of appliance manufacturers.

The development of the use of gas, the studying and putting into effect methods necessary for its sale, and the inducement and extension of more cordial and friendly relations between consumers and producers of gas and appliances are the objects of the Association.

Recognizing the identity of interests of these two different classes and with an enthusiastic belief in the future of the industry this organization has had wonderful success in the carrying on of its work. Meetings are held monthly from October to May of each year when well known speakers of a national reputation in the gas industry address the gathering after which the meeting is open for general discussion.

The membership has increased each year and has now reached 175. The success of any organization is largely due to its attractive programme coupled with the watchful care of an efficient and enthusiastic board of officers, and when one learns that the average membership attendance has been 74 per cent at each meeting for the past two years it must be apparent that good results must follow. The present officers are J. J. Quinn, Governor; J. H. Sumner, Secretary-Treasurer; L. F. Geffin, G. E. Velte, Charles Otten, Jr., George T. Fisher and A. E. Willard who constitute the Board of Managers.

A. C A. Elected Honorary Foreign Members

Four honorary members were elected by the American Gas Association at its general session on Tuesday morning. They were:

J. Ferguson Bell, president of the Institution of Gas Engineers of Great Britain;

Rolland D'Estape, president of the Societe Technique de l'Industrie du Gaz en France;

President M. Escher of the Swiss Society of Gas and Water Engineers, and

President Ellis of the British Commercial Gas Association.

(*Continued from Page* 989)

gas can be used as an enricher as long as it is available.

Retiring President Klumpp Addresses Meeting

Mr. J. B. Klumpp, retiring President of the American Gas Association, who entered the room at this moment was called upon for a few remarks. He congratulated the members of the Technical Section on the work that they accomplished during the past year. He extende dhis thanks to the Technical Section for the cooperation that is extended him during the year.

Considerable discussion followed the deliverance on the first paper. Mr. Alexander B. Macbeth opened the discussion on Mr. Hurlburt's paper and described the conditions that exist in the natural gas field in California.

Report of Water Gas Committee

The next item on the program was the report of the Committee on Water Gas (Carburetted and Uncarburetted), of which J. S. Kennedy of the Standard Gas Light Co., of New York, was the Chairman. This report was printed in abstracted form in Tuesday morning's issue of the American Gas Journal. The work of the committee was divided into three parts. Operators', Uncarburetted Water Gas and Builders'. The reports of the various sub-committees were very comprehensive and interesting. One of the interesting papers in the Operators' Section was on the back run process. Another paper was concerned with the use of soft coal as a generator fuel. There were also many reports on tests made by different gas companies on this subject. In the report of the Uncarburetted Water Gas Section it was pointed out that a canvass of the situation developed the fact that there are very few strictly blue water gas plants in operation in this country.

The Builders' Section was devoted to reports submitted by manufacturers of water gas apparatus.

Gummy Deposits in Meters

The final paper of the afternoon was delivered by Dr. R. L. Brown of the Bureau of Mines, Pittsburgh, Pa., on "Gummy Deposits in Gas Meters—Causes and Prevention." In this paper the results of an investigation were reported, the object of which was to find the cause of the deposits and the means of eliminating future deposits of the character described in the original paper which is found in abstracted form in another part of this issue.

The meeting which was well attended and in which there was considerable discussion on the various papers that were presented at this meeting.

SOUTHERN GAS MEN NOTE!

GET-TO-GETHER DINNER
Southern Gas Assn.

LAVICTOIRE RESTAURANT
12:30 P. M.
WEDNESDAY, OCT. 15TH

Members Are Requested to Register at
BOOTH 169
AMERICAN GAS JOURNAL

J. P. CONNOLLY,
Sec.-Treas.

Charles W. Dawes is not the only man that gets big ideas smoking his pipe. J. F. Weedon, Chicago gets some also.

Registration of A. G. A. Members will be printed in two sections in each daily issue of the American Gas Journal. List of Guests registered can be found in Booth 169 on Steel Pier.

Section I
Registration up to 2 p. m., Oct. 14th

A

Abel, H. C.; New York City; Traymore
Adams, Walter J.; Long Island City, N. Y.; Morton
Adams, Oliver W.; Brockton, Mass.; Knickerbocker
Addicks, Allen Drew; Newark, N. J.; Haddon Hall
Alexander, J. L.; Haverhill, Mass.; Traymore
Allen, A. B.; New York City; Chalfonte
Allen, Williams H. Jr.; New York City; Chalfonte
Allen, Ernest W.; Lynn, Mass.; Traymore
Allen, Geo. W.; Toronto, Canada
Allington, John B.; Rochester, N. Y.; Traymore
Andrews, C. W.; West Duluth, Minn.; Marl-Blen.
Ashworth, James; Jersey City, N. J.; St. Charles
Aspinwall, Chas. C.; Brooklyn, N. Y.; Strand
Atwood, Byron H.; Wilmington, Del.; St. Charles
Aumuller, Otto J.; Brooklyn, N. Y.; Haddon Hall
Babcock, L. Francis; New York City; Ritz-Carlton
Baechle, Edward J.; Cincinnati, O.; Ambassador
Bailey, M. H.; Phila, Pa.; Traymore
Bailey, E. M.; Newark, N. J.; Haddon Hall

B

Bains, Geo. B. 3rd; Harrisburg, Pa.; Traymore
Baker, Henry N.; Yonkers, N. Y.; Bothwell
Ballard, R. Frederick; Chester, Pa.; Chalfonte
Barnitz, Frank R.; New York City; Brighton
Barrows, George S.; Providence, R. I.; Ambassador
Barrington, Walter D.; New York City; Ambassador
Barthold, W. H.; New York City; Ambassador
Barton, Wm. H.; Portland, Oregon; Traymore
Basquin, Eugene E.; Bronx, N. Y.; Traymore
Bates, Harry E.; Chicago, Ill.; Traymore
Bates, Stanley Francis; Macon, Ga.; Traymore
Battin, W. I.; Phila, Pa.; Traymore
Beard, Wm. Kelly; Phila, Pa.
Beaven, Harry Edger; New York City; Ambassador
Beebee, A. M.; Rochester, N. Y.; Traymore
Behrman, Henry; Brooklyn, N. Y.; St. Charles
Bell, William; Haverhill, Mass.; Traymore
Benedict, D. B.; New Brunswick, N. J.; Haddon Hall
Benesh, Matthew E.; Chicago, Ill.; Traymore
Benner, Thomas B.; Phila, Pa.; Elwood
Bennett, Charles E.; Binghamton, N. Y.; Traymore
Bennett, Miss May; Cleveland, O.; Strand
Bennitt, Geo. E.; New York City; Strand
Berchtold, E. W.; South Weymouth, Mass.; Chalfonte
Bertke, W. A.; St. Louis, Mo.; Knickerbocker
Bertolette, N. B.; Bristol, Pa.; Traymore
Biemiller, Lawrence E.; Baltimore, Md.; Traymore
Bierce, Thuber H.; Newark, N. J.; Strand
Bird, Eugene Hunt; Pittsburgh, Pa.; Traymore
Bischoff, Frank F.; New York City; Brighton
Blanchfield, John I.; Brooklyn, N. Y.; Ambassador
Blauvelt, Warren S.; Terre Haute, Ind.; Chalfonte
Bodine, Samuel T.; Phila, Pa.; Traymore
Bohn, A, Valentine; Glen Ridge, N. J.; Strand
Bosworth, D. L.; Nashville, Tenn.; Traymore
Bradley, Geo. R.; Brooklyn, N. Y.; Strand
Bradley, Wm. A.; White Plains, N. Y.; Bothwell
Brockington, F. T.; Laconia, N. H.; Brighton
Brogan, D. J.; New York City; Knickerbocker
Brown, James A.; Jackson, Mich.; Traymore
Brown, Scott; Chicago, Ill.; Ambassador
Brundrett, E. L.; Phila, Pa.; Brighton.
Burchhardt, J. A.; New York City; Strand
Burdick, R. H.; New York City; Chalfonte
Burke, E. J.; Indianapolis, Ind.; Traymore
Burger, Rudolph E.; New York City; Ritz-Carlton
Burgi, Herman; Springfield, Mass.; Shelburne
Burke, John E.; Buffalo, N. Y.; Ambassador
Burns, J. J.; St. Louis, Mo.; Ambassador
Burritt, Dwight F.; Chicago, Ill.; Traymore
Butler, Joseph; Syracuse, N. Y.; Chalfonte
Bush, Robert W.; Brooklyn, N. Y.; Traymore

C

Cadby, J. N.; Madison, Wis.; Craig Hall
Cadmus, Wm. H.; Bloomfield, N. J.; Bothwell
Callanan, Wm. J.; Auburn, N. Y.; Brighton
Campbell, C. L.; Waterbury, Conn.; Traymore
Campbell, Roy; Ishpeming, Mich.; Ambassador
Caputi, Nicholas G.; Salem, Mass.; Strand
Carpenter, H. S.; Newark, N. J.; Ambassador
Carroll, Vincent M.; St. Louis, Mo.; Ambassador
Carter, Wilfred; Roxbury, Mass.; Chalfonte
Carner, E. H.; Boston, Mass.; Ambassador
Carney, Thos.; Phila, Pa.; Holmhurst
Carter, R. A. Jr.; New York City; Ambassador
Carter, C. E.; Danbury, Conn; Ritz-Carlton
Castor, W. A.; Phila, Pa.; Haddon Hall
Chartier, Harold S.; Gloversville, N. Y.; Strand
Chamberlain, Glenn R.; Grand Rapids, Mich.; Haddon Hall
Cheney, Herbert N.; Boston, Mass; Chalfonte
Chew, R. E.; Bloomington, Ill.; Breakers
Chewning, W. L.; Phila, Pa.; Traymore
Chrisman, C. S.; Phila, Pa.; Ambassador
Christman, H. S.; Phila, Pa.; Strand
Clark, John C.; Phila, Pa.; Knickerbocker
Clark, John A. Jr.; Newark, N. J.; Strand
Cohn, Charles M.; Baltimore, Md.; Shelburne
Collier, Charles A.; Atlanta, Ga.; Chalfonte
Collins, Carroll; Iowa Falls, Iowa; Traymore
Comeau, Lucien; Manchester, N. H.; Strand
Conover, John L. Jr.; Newark, N. J.; Haddon Hall
Conard, Chas. A.; Phila, Pa.; Strand
Cocke, J. Bowdoin; Newport News, Va.
Cooper, Stuart; Charleston, S. Carolina; Strand
Cougevan, Thos. M.; Canandaigua, N. Y.; Traymore
Cornish, R. C.; Phila, Pa.; Ambassador
Cordero, H. C.; Rock Hill, S. Carolina; Breakers
Corbus, F. G.; Phila, Pa.; Shelburne
Corliss, S. T.; Camden, N. J.
Crafts, H. C.; Pittsfield, Mass.; Chalfonte
Crankshaw, J. Ward; Allentown, Pa.; Strand
Critchfield, Chas. V.; Fairmont, W. Va.; Traymore
Cunningham, Thos.; Newburgh, N. Y.; Strand
Cullen, Geo. L.; Harrisburg, Pa.; Traymore
Curtis, S. P.; Phila, Pa.; Ambassador
Curley, Thomas F.; Stapleton, N. Y.; Ambassador
Curran, G. W.; Phila, Pa.; Traymore

D

Dahlstrom, B. P.; Hoboken, N. J.; Haddon Hall
Daley, Martin B.; Cleveland, O.; Ritz-Carlton
Daly, David; Pawtucket, R. I.; Ritz-Carlton
Dashiell, P. T.; Phila, Pa.; Strand
Davidson, H. C.; New York City; Chalfonte
Davis, Horace M.; Lincoln, Neb.; Ambassador
Dean, Harry C.; Phila, Pa.; Ambassador
De Coriolis, E. G.; Boston Mass.; Ambassador
De Hart, J. S. Jr.; Newark, N. J.; Traymore
Deierlein, Edward; Portchester, N. Y.; Knights of Columbus Home
De Long, J. C.; Syracuse, N. Y.; Ambassador
Dell Plain, Morse; Hammond, Ind.; Chalfonte
Dembke, H. E. O.; Brooklyn, N. Y.; Strand
Denman, B. J.; Davenport, Ia.; Ambassador
Dennis, Christopher; Newark, N. J.
Devlin, John C.; Brooklyn, N. Y.; Traymore
Dickey, E. D. V.; Hannibal, Mo.; Ambassador
Dillon, M. E.; Coney Island, N. Y.; Chalfonte
Doering, Wm. A.; Boston, Mass.; Chalfonte
Dorner, Wm. F.; Phila, Pa.; Ambassador
Douglas, J. B.; Phila, Pa.; Traymore
Doull, R. S.; New York City; Haddon Hall
Dow, Col. Fred N.; Portland, Ore.; Haddon Hall
Drake, Francis E.; Lynn, Mass.; Traymore
Dudley, A. D.; Syracuse, N. Y.; Breakers
Duvall, B. A.; Baltimore, Md.; Haddon Hall

E

Earle, Wm. H.; Rochester, N. Y.; Traymore
Eastman, H. L.; Kansas City, Mo.; Breakers
Eaton, H. M.; Detroit, Mich.; Ambassador
Ebbecke, Wm. H.; Phila, Pa.; Strand
Eigenbrot, J. L.; Lowell, Mass.; Ambassador
Elliott, B. H.; Birmingham, Ala.; Ambassador
Elmes, Cecil F.; Chicago, Ill.; Marlborough-Blen.
Entwisle, I. H.; Washington, D. C.; Traymore
Eustace, John H.; Chicago, Ill.; Traymore
Evans, G. B.; St. Louis, Mo.; Traymore
Evarts, Daniel E. Jr.; Jersey City, N. J.; Strand
Eysenbach, E. E.; Hartford, Conn.; Traymore

F

Farnsworth, K. C.; Phila, Pa.; Seaside
Ferris, Herbert H.; Newark, N. J.; Traymore
Feuers, H. C.; Sedalia, Mo.; Ritz-Carlton
Fielding, L. C.; East Boston, Mass.; Chalfonte
Fife, H. S.; Phila, Pa.
Fischer, Alfred; Ann Arbor, Mich.; Chalfonte
Fisher, Fred, W.; Rochester, N. Y.; Traymore
Fitzgerald, L.; Gary, Ind.; Knickerbocker
Fitzgerald, John J.; Holyoke, Mass.; Haddon Hall
Ford, Waldo; Lima, O.; Traymore
Forstall, A. E.; New York City; Strand
Frary, Charles O.; Chicago, Ill.; Traymore
Frey, Mrs. Flora; Cleveland, O.; Strand
Frey, H. F.; Allentown, Pa.; Strand
Frick, John A.; Allentown, Pa.; Strand
Fritz, Edwin C.; Cleveland, O.; Traymore
Fritz, H. C.; Cleveland, O.; Traymore
Fusselman, Paul A.; Ardmore, Pa.; Strand

G

Gallagher, R. W.; Cleveland, O.; Brighton
Gans, Geo. M.; Woodridge, N. J.; Haddon Hall
Ganter, Alfred A.; New York City; Fredonia
Gatehouse, Geo. W.; Brooklyn, N. Y.; Haddon Hall
Genay, Thos. B.; Phila, Pa.; Ambassador
German, Wm. H.; Harrisburg, Pa.; Traymore
Gilbert, Geo. L.; Fall River, Mass.; Traymore
Gill, W. Herbert; Washington, D. C.; Traymore
Gonnoud, A. J.; Brooklyn, N. J.; Traymore
Goodwin, Fred M.; Boston, Mass.; Chalfonte
Gordon, Frank C.; New York City; Brighton
Graham, E. G.; New Rochelle, N. Y.; Strand
Graveley, R. C.; Sag Harbor, N. Y.; Breakers
Greene, J. J.; New York City; Shelburne
Greene, R. L.; Brooklyn, N. Y.; Ambassador
Griswold, R. G.; New York City; Ritz-Carlton

H

Habfast, Charles; Burlington, N. J.; Albemarle
Haddock, Isaac T.; Cambridge, Mass.; Traymore

Hall, Arthur S.; Springfield, Mass; Shelburne
Hall, Howard B.; East Braintree, Mass.; Seaside
Hall, Isaac S.; Boston, Mass.; Traymore
Halley, Alexander A.; Yonkers, N. Y.; Traymore
Harriman, H. M.; Brooklyn, N. Y.; Ambassador
Harris, L. Martin; Newark, N. J.; Morton
Harry, M. L.; Decatur, Ill.; Ambassador
Hawks, Arthur W. Jr.; Baltimore, Md.; Brighton
Heebner, Chas. N.; Phila, Pa.; Traymore
Hemminger, G. R.; Phila, Pa.; Chalfonte
Henderson, C. R.; Ann Harbor, Mich.
Hickey, Morgan J.; Larchmont, N. Y.; Ambassador
Hiddleson, W. A.; Bristol, Tenn.; Ritz-Carlton
Himsworth, H. H.; Astoria, L. I., N. Y.; Ambassador
Hirst, H. Torrence; Chicago, Ill.; Traymore
Hitz, G. E.; Poughkeepsie, N. Y.; St. Charles
Hoffman, Howard; Aurora, Ill.; Seaside
Hopper, Thos. B.; Washington, D. C.; Traymore
Holman, C. L.; St. Louis, Mo.; Traymore
Holmes, Herbert M.; Phila, Pa.; Strand
Holzer, E. G.; Norfolk, Va.; Morton
Hornbostal, Louis; New York City; Seaside
Horr, F. Allen; St. Louis, Mo.; Ambassador
Houston, F. M.; Elmira, N. Y.; Traymore
Howard, John A.; Dowagiac, Mich.; Traymore
Howe, F. G. Jr.; Waltham, Mass.; Chalfonte
Howley, J. F. Jr.; Brooklyn, N. Y.; Raleigh
Hubbs, J. H.; Phila, Pa.; Brighton
Hudson, D. S.; New York City; Ambassador
Hurlburt, Alfred; Pittsburgh, Pa.; Ambassador
Hutchings, James T.; Phila, Pa.; Traymore
Hyde, Ed. B.; New York City; Flanders

I

Ingle, R. B.; Fulton, N. Y.; Breakers

J

Jackson, R. G.; Elizabeth, N. J.; Strand
Jacobson, E.; Chicago, Ill.; Traymore
James, Wm. H.; Baltimore, Md.; Strand
Janney, T. G.; Chicago, Ill.
Jardine, D. W.; Burlington, Vt.; Traymore
Jeffrey, Joseph; Scranton, Pa.; Haddon Hall
Jenkins, C. V.; Henderson, N. C.; Breakers
Johnson, W. B.; Toronto, Ont. Can.; Traymore

K

Kahn, Albert M.; Hamilton, O.; Shelburne
Karahner, G. M.; New York City; Brighton
Keane, F. A.; Jersey City, N. J.; Strand
Kelly, F. J.; New York City; Bothwell
Kemp, W. W.; Baltimore, Md.; Breakers
Kennedy, Thos. F.; New York City; Ritz-Carlton
Kibbe, J I.; New Brunswick, N. J.; Strand
King, E. W.; Syracuse, N. Y.; Ambassador
Kirk, C. L.; Indianapolis, Ind.; Breakers
Kirkman, H. P.; Brooklyn, N. Y.; Haddon Hall
Kline, H. C.; Oak Park, Ill.; Traymore
Knapp, K. R.; Phila, Pa.; Ambassador
Knauss, John B.; Portsmouth, O.
Knowles, James M.; New York City; Brighton
Knowlton, R. H.; Phila, Pa.; Chalfonte
Kohlmann, Wm. L.; Brooklyn, N. Y.; Chalfonte
Kunberger, A. F.; Phila, Pa.; Ambassador
Kunze, Walter W.; Brooklyn, N. Y.; Haddon Hall

L

Lawlor, R. H.; Jackson, Mich.; Traymore
Lamson, W. O. Jr.; West Chester, Pa.; Shelburne
Lass, Chas. A.; Birmingham, Ala.; Ambassador
Latch, Wm. R.; Burlington, N. J.; Haddon Hall
Leahy, Chas. J.; New York City; Ambassador
Lehnert, F. J.; Trenton, N. J.; Haddon Hall
Leinroth, J. F.; Newark, N. J.; Haddon Hall
Leison, T. A.; Omaha, Neb.; Chalfonte
Levan, D. H.; Savannah, Ga.; Ambassador
Linton, S. E.; Nashville, Tenn; Traymore
Littell, C. E.; New Haven, Conn.; Traymore
Little, S. E.; Lorain, O.; St. Charles
Loebell, H. O.; New York City; Traymore
Long, L. M.; Memphis, Tenn.; Ambassador
Lovell, Miss Maye; New York City; Brighton
Lucas, Thos. J.; Chicago, Ill.
Luecders, C. J.; St. Louis, Mo.; Ambassador
Lunn, Chas. A.; New York City; Haddon Hall
Luqueer, R. O.; New York City; Ambassador
Lynch, E. P.; St. Louis, Mo.; Ambassador
Lyons, Harry J.; Geneva, Ill.; Breakers
Lydecker, F. A.; Newark, N. J.; Strand

M

MacArthur, D.; Jersey City, N. J.; Shelburne
MacMahon, Wm.; Boston, Mass.; Chalfonte
MacNorris, E.; Phila, Pa.; Ambassador
McBride, R. S.; Washington, D. C.; Haddon Hall
McCorkindale, Wm. J.; Roanoke, Va.
McIlhenny, John D.; Phila, Pa.; 115 S. Newton Ave.
McIlhenny, J. S.; Washington, D. C.; Traymore
MacIntosh, W. L.; New York City; Chalfonte
McKay, Wm. E.; Boston, Mass.
McKenzie, T. C.; Monroe, Mich.; Ambassador
McMaster, W. S.; Freeport, Ill.; Ritz-Carlton
McQueen, J. R.; Washington, D. C.; Traymore
Macbeth, G. T.; Yonkers, N. Y.; Chalfonte
Malone, P. K.; Gloversville, N. Y.; Strand
Malone, M. E.; Denver, Colo.; Ritz-Carlton
Manier, R. W.; Binghamton, N. Y.; Chalfonte
Mann, H. E.; Auburn, N. Y.; Seaside
Marsh, E. H.; Brooklyn, N. Y.; Strand
Mason, Edwin A.; Chicago, Ill.; Chelsea
Mansfield, Jos. H.; New York City; Bothwell
Mead, L. T. Jr.; East Orange, N. J.; Strand
Menard, R. A.; Boston Mass.; Chalfonte
Mueller, Robert; Decatur, Ill.; Ambassador
Mulholland, Thos. A.; Brooklyn, N. Y.; Breakers
Murdoch, W. J.; Joliet, Ill.; Shelburne
Myrelius, Mauritz G.; Phila, Pa.; Ambassador

N

Newman, H. H.; Trenton, N. J.; Haddon Hall
Newberry, F. E.; Staten Island, N. Y.; Traymore
Nickerson, H. L. R.; Boston, Mass.; Chalfonte
Norris, W. A.; Glassboro, N. J.; Strand
Norton, A. E.; Boston, Mass.; Haddon Hall
Norman, O. E.; Chicago, Ill.; Traymore
Norcross, J. A.; New Haven, Conn.; Traymore

O

O'Callahan, M. J.; New York City; Knickerbocker
O'Keefe, J. G.; Newark, N. J.; Ambassador
O'Neill, Thos. A.; New York City; Strand

P

Prezzano, Edward; Yonkers, N. Y.
Pringle, F. L.; Lima, O.; Traymore
Printz, Chas. H.; Cleveland, O.; Traymore
Pulliam, I. P.; Milwaukee, Wis.; Bothwell
Putman, Eben F.; Norwalk, Conn.; Ambassador
Parke, F. B.; Brooklyn, N. Y.; St. Charles
Parmelee, L. D.; Albany, N. Y.; Craig Hall
Payne, T. P.; Brooklyn, N. Y.; Haddon Hall
Pease, L. M.; New Bedford, Mass.; Breakers
Peffly I. W.; New York City; Chalfonte
Peissner, F. J.; Raspeburg, Md.; Brighton
Penfield, Wm. M.; East Orange, N. J.; Strand
Perry, J. A.; Phila, Pa.; Traymore
Perry, L. P.; Poughkeepsie, N. Y.; Ambassador
Peterson, C. G.; Providence, R. I.; Haddon Hall
Pettingell, A. F.; Cambridge, Mass.; Chalfonte
Pettes, W. H.; Newark, N. J.; Haddon Hall
Phelps, W. C.; New York City; Chalfonte
Phillipps, R. H. Jr.; Jersey City, N. J.; Ambassador
Pickel, C. S.; New York City; Stevenson
Piser, Theo. H.; Boston, Mass.; Haddon Hall
Pollitt, L. Irving; Baltimore, Md.; Ritz-Carlton
Postlees, J. Van G.; Phila, Pa.; Traymore
Potter, N. H.; Paterson, N. J.; Haddon Hall
Pratt, S. M.; New York City; Strand
Prather, R. V.; Springfield, Ill.; Traymore
Preston, Ord; Washington, D. C.; Traymore
Price, Chas. R.; New Bedford.
Price, Otto; Quincy, Mass.; Traymore
Prince, N. F.; Rochester, N. Y.; Traymore
Pritchett, O. H.; Baltimore, Md.; Brighton
Puryear, W. R.; Ruston, Md.; Brighton

R

Rossman, W. Frank; Brockton, Mass.; Chalfonte
Roth, Harry P.; Pittsburgh, Pa.; Traymore
Rothert, E. R.; Cincinnati, O.; Traymore
Rahn, Bruno; Milwaukee, Wis.; Traymore
Ramsey, R. E.; Phila, Pa.
Ransdell, Ducan D.; Washington, D. C.; Traymore
Reardon, E. F.; Brooklyn, N. Y.; Ambassador
Reddy, W. J.; St. Paul, Minn.; Breakers
Reed, Geo. E.; Bound Brook, N. J.; Haddon Hall
Rees, R.; Kalamazoo, Mich.; Breakers
Reese, John G.; Baltimore, Md.; Traymore
Reimers, B. F.; Paterson, N. J.; Haddon Hall
Replogle, L. E.; Newark, N. J.; Strand
Reynolds, Paul J.; Englewood, N. J.; Haddon Hall
Rhoades, W. R.; Sunbury, Pa.; Breakers
Richardson, R. B.; Stapleton, N. Y.; Traymore
Rieha, Ed. L.; Baltimore, Md.; Ritz-Carlton
Riseley C. W.; Jersey City, N. J.; Haddon Hall
Ritchie, A. R.; New York City; Ambassador
Robinson, C. D.; Omaha, Neb.; Ambassador
Robnett, E. H.; Orange, N. J.; Ambassador
Rodd, C. A.; Brooklyn, N. Y.; Sterling
Rooney, J. Francis; New York City; Brighton
Roth, P. A.; East Orange, N. J.; Strand
Ruegenberg, J. M.; Phila, Pa.; Knickerbocker
Rutledge, F. J.; Phila, Pa.; Traymore
Ryder, D. R.; Jersey City, N. J.; Haddon Hall

S

St. John, John; Madison, Wis.; Traymore
Samuels, J. A.; New York City; Ambassador
Schmidt, G. F.; Chicago, Ill.; Strand
Schmidt, E. H.; New York City; Strand
Schobel, C. O.; Baltimore, Md.; Ambassador
Schonfisch, Wm. R.; New York City; Brighton
Schroeder, A. G.; Grand Rapids, Mich.; Haddon Hall
Schwabe, W. P.; Thompsonville, Conn.; Seaside
Scranton, W.; Scranton, Pa.; Haddon Hall
Sebald, H. A.; Coldwater, Mich.; Ambassador
Seeley, H. K.; Phila, Pa.; Traymore
Shevlin, E. B.; Albany, N. Y.; Craig Hall
Shevlin, H. S.; Manayunk, Pa.; Strand
Seymour, F. W.; Battle, Creek, Mich.; Traymore
Shattuck, J. D.; Chester, Pa.; St. Charles
Smith, George, H.; Poughkeepsie, N. Y.; Ambassador
Smith, H. H.; Boston, Mass.; Chalfonte
Smith, J. C.; Reading, Pa.; Strand
Steinwedell, W. E.; Cleveland, O.; Traymore
Stephenson, H. R.; Sioux City, Ia.; Ritz-Carlton
Stevens, E. M.; Columbus, O.; Chalfonte
Stevens, Charles W.; Columbus, O.; Chalfonte
Swann, Ada Bessie; Newark, N. J.; Haddon Hall
Sweatt, Charles; Minneapolis, Minn.; Traymore
Spencer, John D.; Oskosh, Wis.
Stauer, Robert C.; New York City; Bothwell
Steere, F. W.; Detroit, Mich.; Haddon Hall
Stetser, Jesse R.; Gloucester, N. J.; Bothwell
Stevens, F. E.; Chalfonte
Stiles Geo. W.; Portland, Me.; Haddon Hall
Stitzer, R. B.; Toledo, O.; Ambassador
Stiteler, Herbert E.; Phila, Pa.; Strand
Stock, Alvin Meredith; Strand
Storey, Thomas G.; Denver, Colo.; Ritz-Carlton

T

Traugott, J. M.; Phila, Pa.; Traymore
Trump, R. W.; Phila, Pa.; Brighton
Tuck, A. M.; Pittsburgh, Pa.; Shelburne
Turner, Lyle; Cleveland, O.; Strand
Turnbull, Jas. A.; Thompsonvill, Conn.; Marl.-Blen.

W

Wehrle, Geo.; Denver, Colo.; Ritz-Carlton
Wetzel, C. E.; Phila, Pa.; Colton Manor
Whitelaw, H. Leigh; New York City; Traymore
Whittaker, Frederick S.; Phila, Pa.; Brighton
Whitwell, Geo. Edw.; Tacoma, Wash.; Chalfonte
Wiberley, Geo.; New York City; Chalfonte
Wieber, Geo. A.; Urica, N. Y.; Shelburne
Willcox, R. I.; New York City; St. Charles
Willard, H. A.; Washington, D. C.; Chalfonte
Willert, A. E.; Wheeling, W. Va.; Ambassador
Willard, Edw. A.; Portland, Me.; Bothwell
Williamson, John Andrew; Chicago, Ill.; Traymore
Winters, A. G.; Chicago, Ill.; Ambassador
Wuestenfeld, Wm. J.; Ottumwa, Ia.; Breakers
Willien, L. J.; Boston, Mass.; Traymore
Windle, Ernest G.; Phila, Pa.; Haddon Hall
Witherby, Edwin W.; Boston, Mass.; Traymore
Wharton, Frank D.; Syracuse, N. Y.; Traymore
Wolfe, A. M. W.; Baltimore, Md.; Traymore

Section II
Registration from 2 p. m. to 4 p. m., Oct. 14th

A

Ackerman, Richard; Englewood, N. J.; Had'n Hall
Annett, Edw. B.; Maplewood, N. J.; Haddon Hall
Atherton, Edgar; Paterson, N. J.; Haddon Hall

B

Barry, M. J.; Kansas City, Mo.; Traymore
Bartlett, Craig S.; Eliabeth, N. J.; Haddon Hall
Beach, Harold C.; Jackson, Mich.; Ambassador
Bensel, C. Lester; Trenton, N. J.; Haddon Hall
Bennett, Orville G.; Ossining, N. Y.; Haddon Hall
Benson, Blair V.; Jersey City, N. J.; Haddon Hall
Blackwell, Edwin G.; New York City; Ambassador
Blake, F. C.; Henry Clay, Wil., Del.; Ambassador
Brandt, A.; Newark, N. J.; Haddon Hall
Bratz, August John; Summit, N. J.; Haddon Hall
Brearley, W. R.; Princeton, N. J.; Haddon Hall
Breese, Fred S.; Montclair, N. J.; Haddon Hall
Brewer, J. Ed.; West Conshhocken, Pa.
Bridge, G. L.; St. Louis, Mo.; Chelsea
Broughton, Harry E.; Jackson, Mich.; Ambassador
Brown, Ernest W.; Toronto, Canada; Seaside
Brown, Ralph L.; Pittsburgh, Pa.; St. Charles

C

Carlson, Chas. F.; Plainfeld, N. J.; Haddon Hall
Carolan, P. C.; Somerville, N. J.; Haddon Hall
Cartwright, H. R., Jr.; New York City; Shelburne
Castle, Wm. E.; Orange, N. J.; Haddon Hall
Causbrook, W. R.; Plainfield, N. J.; Knickerbocker
Chadwell, Wm. H.; Newark, N. J.; Ambassador
Cheery, Arthur C.; Bloomfield, N. J.; Strand
Conroy, J. P.; New York City; Strand
Culver, O. T.; Englewood, N. J.; Haddon Hall
Currey, H. J.; Bound Brook, N. J.; Haddon Hall

D

Demorest, Dana J.; Columbus, Ohio; Ambassador
Dequine, L. E.; Long Branch, N. J.; Traymore
Detweiler, C. A.; Pittsburgh, Pa.; Traymore
Downey, Jas. N.; Camden, N. J.; Ambassador
Dunkak, E. B.; Passaic, N. J.; Haddon Hall
Dunn, Frank S.; Albany, N. Y.; Chalfonte
Dutton, H. S., Jr.; Hazleton, Pa.; St. Charles

E

Ellis, Harry; Camden, N. J.; Ambassador
Ellis, S. S.; Crosswicks, N. J.; Haddon Hall

F

Folger, C. H.; Hackensack, N. J.; Ambassador
Fowler, Philip D.; Philadelphia, Pa.; Haddon Hall
Fowler, Ross O.; Rahway, N. J.; Haddon Hall
Fox, John S.; Springfield, Mass.; Traymore
Franklin, S. J.; Millville, N. J.; Traymore

G

Gardner, P. D.; Bayonne, N. J.; Haddon Hall
Gatchell, Frank B.; aBltimore, Md.; St. Charles
Gerould, C. L.; Sound Beach, Conn.; Breakers
Goodnow, George F.; Chicago, Ill.; Ambassador
Grimes, G. W., Jr.; Baltimore, Md.; St. Charles

H

Hartog, John H.; Portland, Oregon
Haskell, W. G., Jr.; Cedar Rapids, Ia.; Shelburne
Haslam, Robt. T.; Cambridge, Mass.; Ambassador
Hay, S. F.; Newark, N. J.; Traymore
Hayden, W. C.; Long Branch, N. J.; Haddon Hall
Hennig, H. W.; Jersey City, N. J.; Haddon Hall
Hutchison, H. F.; Toronto, Ont., Canada; Seaside

J

Johns, W. H.; New Brunswick, N. J.; Haddon Hall
Jones, Minor C. K.; Baltimore, Md.; Ambassador
Jones, Ralph E.; Chester, Pa.; Fredonia

K

Kendall, Robt. T.; Jackson, Mich.; Ambassador
Kennedy, F. J.; New York City; Ambassador
Kent, Edw. G.; Hoboken, N. J.; Haddon Hall
Krake, S. G.; New York City; Chalfonte

L

Lawler, E. A.; W. New York, N. J.; Haddon Hall
Lyons, B. C.; Belleville, N. J.; Haddon Hall

M

McCarter, Thos. N.; Newark, N. J.; Shelburne
McLane, W. W.; East Orange, N. J.; Haddon Hall
McNeice, R. D.; Newark, N. J.; Pa. and Atl. Aves.
Maguire, A. H.; East Orange, N. J.; Haddon Hall
Mant, Lionel A.; Newark, N. J.; Strand
Martin, A. F.; Sharples, W. Va.; Traymore
Mason, John A.; Baltimore, Md.; Traymore
Mangers, Chas. A.; Philadelphia, Pa.; Traymore
Miller, E. F.; Merchantville, N. J.
Miller, C. O. G.; Sanfrancisco, Calif.; Traymore
Mickle, J. E.; Media, Pa.; Cheltenham-Revere
Meyers, W. J.; New York City; Holmhurst
Metzner, C. A.; Detroit, Mich.; Traymore
Messenger, J. A.; Phila., Pa.; Traymore
Merrifield, Wm.; New York City; Ambassador
Merchant, O. A., Jr.; Ams'dm, N. Y. Ambas'dor
Mendelson, L. R.; Cleceland. O.; Ambassador
Memdez, F. L.; Chester, Pa.; Monticello
Dedcalf, J. C.; Baltimore, Md.; Brighton
Menard, Ralph A.; Boston, Mass.; Chalfonte
Miller, Thomas D.; St. Louis, Mo.; Ritz Carlton
Miller, V. A.; Rochester, N. Y.; Traymore
Miller ,Wm. A.; Cincinnati, O.; Shelburne
Mills, Samuel A.; Brooklyn, N. Y.; St. Charles
Mitchell, Wylie, Middletown, O.; Ambassador
Moody Harry L.; Phila., Pa.; Traymore
Moore, Wm. T.; Elmhurst, L. I.; St. Charles
Morehouse, H. P.; Newark, N. J.; Haddon Hall
Morris, W. R.; Jersey City, N. J.; Shelburne
Moses, Frank D.; Trento n,N. J.; Chalfonte
Moses, Wm. F.; Auburn, N. Y.; Brighton
Moyer, Wayne B.; Phila., Pa.; Starnd
Mullaney, B. J.; Chicago, Ill.; Traymore
Mullarky, J. J.; Camden, N. J.; Haddon Hall
Mundor, C. F.; Millville, N. J.; Ambassador
Murfit, W. G.; Newtown, Pa.; Breakers
Murphy, Edw. J.; Brooklyn N,. Y.; Strand
Murphy, J. B.; White Plains, N. Y.; Strand
Murray, Francis X.; New York City; Strand
Murray, John L.; Biddleford, Me.; Traymore
Myers, Edw. B.; Phila., Pa.; Shelburne
Myers, J. B.; Phila., Pa.; Traymore

N

Neighbour, J. H.; Paterson, N. J.; Chalfonte
Nettleton, Cha .Hs.; Derby, Conn.; Traymore
Neth, John A.; Tarrytown, N. Y.; Bothwell
Nicholson, Henry W.; Newark, N. J.; Strand
Nute, Jos. B.; Fall River, Mass.; Breakers

O

Olwine, H. I.; Cohoes, N. Y.; Ambassador
Otten, Chas.; Plymouth, Mass.; Holmhurst

P

Priest, Geo. H.; Brokton, Mass.; Chalfonte
Pruden, Andrew, Rutherford, N. J.; Haddon Hall

Q

Quinn, J. K.; Newport, R. I.; St. Charles

R

Rasmers, F. E.; Baltimore, Md.; Ambassador
Robbins, M. C.; New York City; Chalfonte
Roberts, J. Eldon; Newark, N. J.; Haddon Hall
Rodgers, Arthur B.; Norwood, Mass.; Clarendon
Ross, Harold J.; Pittsburgh, Pa.; Ambassador
Rosenberg, Max; Pleasantville, N. J.; Holmhurst
Rowe, Clyde E.; Jackson, Mich.; Ambassador
Rusby, John W.; Philadelphia, Pa.; Ambassador

S

Schmidt, F. W.; Jersey City, N. J.; Haddon Hall
Schreck, M. G.; Ridgewood, N. J.; Haddon Hall
Scott, Charles; Toronto, Canada; Seaside
Selke, A. F.; Newburgh, N. Y.; Strand
Shanley, Wm. F.; Norwich, Conn.; Elberon
Smith, G. E.; Jersey City, N. J.; Haddon Hall
Souder, Wm. D.; Philadelphia, Pa.; Chalfonte
Sperr, F. W., Jr.; Pittsburgh, Pa.; Ambassador
Spindle, J. E.; Grand Rapids, Mich.; Ambassador
Stacey, Wayne; Cincinnati, O.; Haddon Hall
Steinmetz, H. P. J.; Camden, N. J.; Haddon Hall
Stainford, R. H.; Brooklyn, N. Y.; Glaslyn-Chat'm
Starzenski, V.; Schenectady, N. Y.; Ambassador
Stephen, Guy E.; Worcester, Mass.; Strand
Stinemire, Wm. H.; Poughkeepsie, N. Y.; Strand
Stockton, H. A.; Atl. Highlands, N. J.; Sterling
Stoecker, L.; Maplewood, N. J.; Haddon Hall
Smith, W. Y.; Battle Creek, Mich.; Traymore
Smith, Wm. F.; Brooklyn, N. Y.; Raleigh
Snyder, Chas. S.; Phila., Pa.; Stanr d
Spragle, L. D.; New Albany, Ind.; Ambassador
Spragle, T. J. Indianapolis, Ind.
Stacey J,y. F.; Elmwood Place, O.; Ambassador
Stallings, J. T.; Elizabeth City, N. C.; Breakers
Stagg, John P.; Brooklyn, N. Y.; Strand
Steits, Ivan M.; Jersey City, N. J.; Haddon Hall
Sterrett, H. R.; Des Mointes, Ia.; Flanders
Sterrett, Wm. G.; Chester, Pa.; Traymore
Stevenson, E. R., Jr.; Chester, Pa.; Strand
Stevens, C. N.; New York City; Ambassador
Stevick, C. H.; Long Island City, N. Y.; Chalfonte
Stewart, W. D.; Fall River, Mass.; Traymore
Stites, T.; Gloucester City, N. J.; Traymore
Stone, J. L.; Spokane, Wash.; Ritz Carlton
Stone, F. W.; Ashtabula, O.; Ambassador
Summer, J. H.; Cambridge, Mass.; Knickerbocker
Sutton, H. A.; Newark, N. J.; Haddon Hall
Swarts, N. B.; Mount Carmel, Pa.; Breakers
Swayze, W. F.; Newtown, Pa.; Breakers
Swearingen, H. G.; Peoria, Ill.; Ambassador
Sykes, W. C.; Rochester, N. Y.; Traymore

T

Taussig, J. H.; Phila., Pa.; Traymore
Tansey, F. D.; Brooklyn, N. Y.; Traymore
Taylor, Geo.; New Rochelle, N. Y.; Breakers
Taylor, Allyn C.; Reading, Pa.; Strand
Thayer, Edwin;
Thomas, Wm. W.; Portland, Me.; Haddon Hall
Thompson, Paul
Thompson, Robt. I.; Durham, N. C.; Seaside
Thurston, R. E.; Putnam, Conn.; Ambassador
Todd, J. A.; Newark, N. J.; Haddon Hall
Tudbury, J. L.; Salem, Mass.; Haddon Hall
Tucker, Edw. J.; Toronto, Ont., Canada; Seaside
Tull, Lucien P. F.; New York City; Chalfonte
Turk, K.; Baltimore, Mr.; Ambassador
Tuttle, W. B.; San Antonio, Tex.; Traymore
Tuttle, Fred A.; Newark, N. J.; Haddon Hall
Traver, Alva F.; New York City; Ritz Carlton

U

Uhlig, Edw. C.; Brooklyn, N. Y.; Strand
Umstead, E. S.; Providence, R. I.; Ambassador

V

Van Brunt, A. J.; Newark, N. J.; Breakers
Vredenbrugh, C. F.; Newburgh, N. Y.; Strand

W

Wagginton, C. W.; Brooklyn, N. Y.; St. Charles
Walker, A. C.; New York City; Fredonia
Walker, Hepburn, Beaver Falls, Pa.; Ambassador
Walker, M. T.; Beaumont, Tex.; Ambassador
Warnich, John H.; Elrama, Pa.; Ambassador
Warren, J. H.; New York City; Strand
Wasser, O. E.; Ithaca, N. Y.; Traymore
Ware, L. H.; Martinsburg, W. Va.; Ambassador
Watson, H. E. G.; Toronto, Canada; LeLande
Weeks, Ernest F.; Trenton, N. J.; Colonial
Weiss, J. M.; New York City; Breakers
Weymouth, Thos. R.; Buffalo, N. Y.; Mari-Bien.
Wilson, D. W.; Orchard Park, N. Y.; Ambassador
Weak, C. H.; Phila., Pa.
Weber, F. C.; New York City; Ritz Carlton
Weiner, L. H.; New York City
Wells, H. H.; Newark, N. J.; Strand
Wells, H. H.; Newark, N. J.; Strand
Welsh, Jos. J.; Stapleton, N. Y.; Ambassador
Welsh, M. G.; Stroudsburg, Pa.; Ritz Carlton
Whipple, Robt. H.; Phila., Pa.; Traymore
Whitcomb, H. D.; Neark, N. J.; Galen Hall
White, E. L.; St. Louis, Mo.; Ambassador
White, L. T.; Danbury, Conn.; Ritz Carlton
Whitwell, S. N.; Washington, D. C.; Traymore
Wilde, Chas.; Chester, Pa.;
Wilder, E. L.; Rochester, N. Y.; Traymore
Williams, C. T.; Sioux City, Ia.; Chalfonte
Wortendyke, I. F.; Janesville, Wis.; Strand

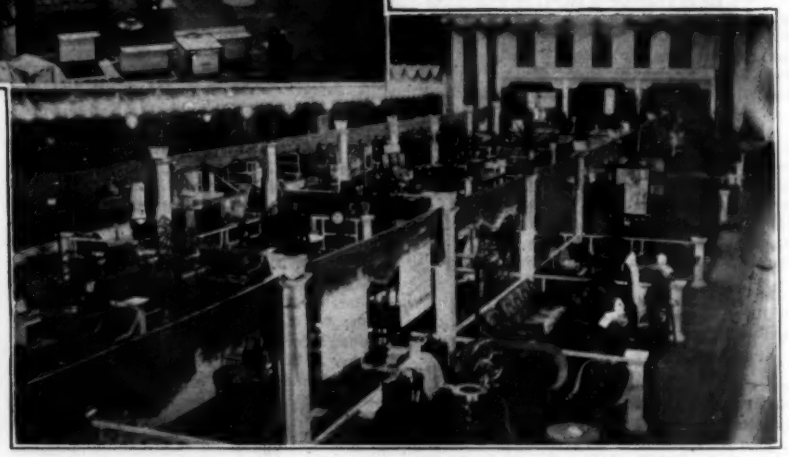
Y

Yeomans, B. B.; Rochester, N. Y.; Traymore
Yeaton, G. D.; Providence, R. I.; Chalfonte
Yong, Alva W.; Ossining, N. Y.; Morton
Young, A. W.; Knoxville, Tenn.; Ritz Carlton
Young, Chas. A.; Brooklyn, N. Y.; Strand
Young, Clifford; Wilmington, Del.; St. Charles
Young, L. B.; Detroit, Mich.; Traymore
Young, P. S.; Newark, N. J.; Shelburne
Young, R. R.; Newark, N. J.; Traymore

Z

Zingg, Julius; Newark, N. J.; Haddon Hall
Zingg, J. P.; Orange, N. J.; Haddon Hall
Zwisler, A. L.; Kalamazoo, Mich.; Strand

A section of the Exhibition showing the general decorative scheme.



Another section at the end of the Steel Pier.

Photo by Koplick

American Gas Journal

SIXTY-SIXTH YEAR

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ISMAR GINSBERG, Technical Editor

Editorial Offices: Atlantic City, Chalfonte Hotel; Booth Telephone, Steel Pier Marine 5744

*The Gas Industry and Its Work

President Klumpp discusses its many phases in his annual address

J. B. Klumpp

President of the American Gas Association

WHEN the American Gas Association was formed in 1918, a code of ethics was adopted, the fulfillment of which assured it success. No better criterion of the wisdom of its organizers is necessary than to observe the record and work of the association during the past five years. You, its members, were fortunate and wise in the selection of able men in the industry to lead you through the first years of its development, as their every effort was toward maintaining those high ideals contained in the objects of the association.

I want to refer to one great object among its precepts, given particular attention by our former president, Mr. Charles A. Munroe; that is, that we may develop the gas industry and co-ordinate its activities to the end that it may serve to the fullest extent the best interests of the public.

This, I believe, has been the earnest endeavor of our association management and the outstanding effort of all of our wide-awake and progressive companies. Good service at reasonable rates is the keynote of success. It gives the public that for which the gas industry was created and renders reasonable compensation to the owners and operators of the properties.

We have every reason to be encouraged today at the progress that has been made by our industry during the past three or four years. The days of depression have passed and the return of prosperity to the country at large seems assured of continuance.

No municipality can be progressive unless its utilities are progressive. The public and the authorities having jurisdiction over the regulation of utilities have realized that the progress of municipal existence depends upon the success of and the services rendered by the utilities and that service is a criterion of a successful or a deficient management. Let us, therefore, see to it that these satisfactory public relations are continued and the very best service is given to the public by our companies.

Rate Regulation

All utility operators desire to serve the public to the best of their ability and at the lowest rates consistent with good service and a fair return. To do this rates cannot be fixed and remain fixed despite varying costs of capital, material and labor.

Not only should the utility be protected against rising costs, but the consumer should benefit when these costs are reduced. It is possible to determine the return the utility should receive upon the valuation of its property and protect this by basing the selling price of gas on this cost plus the cost of producing and distributing the gas, making due reservations for maintenance of the property and a reserve for emergencies. This involves, of course, measures to protect the consumer from extravagance in management and operation. Such a plan should include an incentive for efficiency in operation that is now lacking in most methods of rate regulation.

Valuation

Property valuation and rate of return probably have received more attention during the past few years than any other feature in utility regulation.

Decisions of commissions and courts have been at variance as to methods of determining the valuation of utility properties, but in nearly every case it has been agreed that the great advance in construction costs since the war should be taken into consideration when any valuation is fixed.

A study of the relative cost of "All Commodities," "Material" and "Labor" since the pre-war period is enlightening in view of the fact that it shows the trend of prices since the post-war peak.

Some confusion has occurred in the minds of those who make comparisons between the present value of "All Commodities" and "Utility Construction Costs." "All Commodities," as published by the Government authorities, include farm products, food, clothing, fuels, metals, building materials, chemicals, drugs, etc., but include no labor statistics, and the relative value or index figure today is in the neighborhood of 150, with pre-war figures considered as 100.

Gas Works Construction Costs

"Gas Works Construction Costs," however, are very different. They still have an index figure considerably above 200, with the pre-war figure considered as 100. This is due to the fact that a large proportion of these costs consists of skilled labor and of materials having a large proportion of labor entering into their production.

As long as labor continues to receive its present compensation, there is no reason to expect a mate-

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*Delivered before the general meeting of the American Gas Convention, Tuesday, October 14, 1924.

rial reduction in gas plant construction costs. Hence the position taken by those claiming that the valuation of a property should be largely controlled by the present costs, is being materially strengthened.

While some relief has been obtained by the cheapening of raw material and capital cost, little change has been made in the labor costs entering into the construction and operation of our properties and it is doubtful if we can look forward to any great reduction in the future. Greater efficiency, however, is noticed. Our fellow employes are showing more interest in their work and are giving their earnest efforts in all operations. It is but fair that they should be paid their measure in full and as their skill increases, their wage should likewise.

With the introduction and improvement of many mechanical devices used in the construction and operation of our plants, more skilled and less unskilled labor is employed and operations may be undertaken with the assurance of continued efficiency and we may look forward to seeing the ever-anxious unskilled man improving and entering the ranks of the skilled profession. The education of the young man in our manual training and trade schools, offers every indication of encouragement for the future.

Capital Investment

With the development of our properties, we are ever facing the problems of obtaining new capital for more generating plant and main extensions. To obtain this capital at reasonable rates, we must have a safe and fair financial setup for presentation to the owner of this capital. Our net return must be sufficient to pay a reasonable interest rate, and the security must be sufficient to encourage and protect investment. At the same time we must earn an amount to reimburse the stockholders who must, as owners, provide additional capital to complete the investment and supply working capital. Without such a setup, no property can progress.

It is decidedly an economic principle to substitute a more efficient process of gas manufacture where the saving in operation more than equals the additional fixed capital charges, especially so when the gas-making materials used tend toward conservation of materials more valuable for other uses. But our present systems of rate regulation do not always recognize this economic principle and rates are sometimes fixed so low for efficiently operated companies as to leave little incentive to seek additional capital to improve such properties along more economic lines. Increased efficiencies and lower total costs merit increased earnings to the operators. It is true that present forms of regulation have permitted maintenance reserves to be set up to retire worn-out and obsolete apparatus, but they should also permit a liberal increase in Capital Charges to increase operating efficiency.

Gas Purchase Contracts

Very close regulation of rates many times has left a net income sufficient to provide a return on the capital invested, thereby increasing the difficulty of obtaining new capital. This has led to gas companies making contracts with other corporations for the purchase of gas, whereby the purchase price includes the fixed charges on the manufacturing plant. In this way these capital charges are put above the line. The adoption of this plan should not be necessary but it is attractive and workable where the company is not in a position to finance advantageously.

Purchase of gas in bulk in this manner is steadily increasing and we may expect to see further developments along this line as we have seen large electric generating stations erected to sell current in quantities, thus displacing smaller stations.

The by-product coke oven in some form is here to stay and offers many advantages to the gas man in supplying him with gas in bulk, provided the ovens are operated with care and some consideration is given to the gas company's interests. A constant and assured supply of gas to the utility is necessary or a contract for the purchase of gas cannot be advantageously made. A guaranteed supply of gas of uniform quality can demand a higher price under contract than supply that is irregular and uncertain.

The coke oven plant cannot be a successful investment unless it find a ready and substantial market for its coke, and where this market is obtained through the domestic trade, the coke consumer must be given satisfactory service and his supply must be protected and not withdrawn when other markets temporarily offer a more favorable return. A constant, reliable output for the coke is necessary for an assured supply of gas to the utility.

Gas Standards

For the past few years we have heard much discussion on the subject of gas standards and the efficiency of combustion of various qualities of gas, and these discussions have created many controversies. I here refer to the controversy between those who believe that gases of various heating values are burned with equal efficiency and those who believe otherwise.

There is much to be said on both sides of this question, and the matter has become involved to such an extent that in certain sections the economic development of the gas business has been retarded.

In the accomplishment of any particular effort, our laboratory investigators tell us that, with properly adjusted appliances, equal efficiencies, heat unit for heat unit, are obtained. This is probably true. But our operators also tell us that this ideal condition does not prevail in actual practice; that it is difficult to keep appliances properly adjusted because the gas orifices remain constant and the efficiency therefore varies with changes in the quality of the

gas, and that gas of a low B.t.u. content can be supplied with much greater uniformity than gas rich in hydrocarbons.

Domestic cooking and water heating appliances are particularly subject to disturbances because handled by inexpert users and when the burners become fouled or deranged, they are apt to drop in efficiency.

Gases of high heating value are productive of such fouling and disturbances, and any reduction in heating value that will tend to eliminate condensible hydrocarbons and reduce the other rich carbon-forming constituents, will improve these conditions.

Efficiencies Can Be Increased

Therefore, I am firmly convinced that when the quality of gas is reduced below the trouble zone, efficiencies will be greatly increased, and while it may take more gas to do the same work, the increased consumption will not be proportional to the reduction in heating value.

There is, however, a reason of much greater importance to both the consumer and the Company than this for a reduction in the heating value and that is the effect on the economic development of the industry.

It was the constantly increasing demand for gas for purposes other than illumination through the open-flame burner that caused the gas man to realize that high candle power gas is unnecessary and wasteful, and every effort was made to have the regulating authorities and gas consumers know and appreciate this fact.

Since candle power requirements have been practically eliminated and heating value requirements reduced, the gas men have had an opportunity to demonstrate that low heating value gases can be produced, distributed and utilized with high efficiency.

They have demonstrated that the lower heating value gases can be burned with a larger variation of the air shutter adjustment in the consumers' appliances and the range of average operating efficiency of the Bunsen burner can be increased. They have demonstrated beyond doubt that distribution troubles have been minimized, that gas can be distributed at high pressure with but little loss in quality, thus enabling our suburbs and sparsely settled districts to be supplied.

The Low B. T. U. Gas

In the manufacture of the gas they have demonstrated that low heating value gases can be produced from lower grade gas-making materials, thus making the manufacturing less dependent upon the higher grade gas coals that are continually getting scarcer and the higher grade gas oils that are being utilized for other purposes.

The general action on the part of all regulating authorities in permitting the production and supply of lower heating value gas, both here and abroad, has enabled the gas producers to make unprecedented progress in the development of the industry. The improvements in the process of coal carbonization, the increased output of surplus gas from coke ovens, the backrun, the blowrun, and the use of bituminous coal in water gas apparatus, to say nothing of the use of heavy oils for carburetting purposes, have all been the result of liberal methods and intensified thought permitted by the reduction of heating value standards. To say that the consumer has not been benefitted by these improvements, many of which have cheapened manufacture, is to take a very narrow view of the matter indeed.

It is undoubtedly a fact that in many instances a reduction in heating value has not been accompanied by a corresponding reduction in selling rate, but where the income of the company is based on an equitable return, it is obvious that no reduction in heating value would have justified and made necessary increased selling rates. Any proposition that will enable gas companies to obtain new uses for their gas output and increase their load factor, should ultimately enable them to manufacture and sell gas at lower prices. Thus again will the domestic consumer be benefitted.

I firmly believe that this movement has enabled the consumer to get a gas that has been eminently satisfactory at a much lower price than would have been charged had a high heating value gas been required.

Heating Value Resolution

During the past year the Advisory Council and the Executive Board of this Association put themselves on record as recommending the abolition of state uniform heating value standards, suggesting that more efficient operation and greater economies can be obtained by allowing the manufacture and distribution of such heating values as the existing and proposed apparatus and local conditions permit.

I believe that such an action would result in a progressive development of the industry. I believe that local materials would be more generally utilized and advanced methods of gas generation could be introduced.

It has been demonstrated that gas having heating values of 300 to 400 B.t.u. per cubic foot can be efficiently burned and give satisfactory service in all appliances, both domestic and industrial.

Any gas of uniform constituents, when free from condensible hydrocarbons and low in rich hydrocarbons, is satisfactory for distribution and domestic service, and each company should be permitted to supply that quality best suited for its local conditions.

Central Laboratories

During the past year, much attention has been given by certain governmental authorities and by our Executive Board, to the thought of establish-

ing a central laboratory for testing and approving gas appliances.

This matter has been brought to the fore on account of the apparent necessity for correcting methods of installation of certain types of appliances and for the purpose of correcting or eliminating defects in types said to be either inefficient or unsatisfactory.

Your Executive Board, after having received from a committee appointed for the purpose, a full and comprehensive report, has given due consideration to the matter and has authorized the establishment of such a laboratory conducted under the auspices of the Association. We believe that when it is established and functioning, the results will be to improve the conditions under which gas is consumed in domestic appliances, and will do much to protect our reliable appliance manufacturers and at the same time tend to eliminate such apparatus as is made solely for the purpose of selling cheaply. The consumer will be protected by increased efficiency and safety of utilization.

The development of gas appliances, both industrial and domestic, has made rapid progress during the past few years, but there is still an opportunity to develop certain types where the heat may be stored and load factor increased with equal benefit to both consumer and company. I refer particularly to water heating and domestic cooking appliances and to space heaters, because I believe that gas utilities, when properly operated and equipped, can sell and distribute heat with such high efficiency that little fear need be occasioned by other utility competition.

This central laboratory, operated under the auspices of the Association, will be a means to accomplish that purpose and I recommend that our company members join in supporting it and insuring its successful operation.

Educational Matters

For several years past the Association and its affiliated branches have given considerable attention to the matter of education of individuals, and the public generally, in many phases of our business. I take this as one of the greatest moves that we have undertaken. Through our Publicity Bureaus, we are informing the public of the importance and value of our Industry, of the great service we can be to them if they will avail themselves of the opportunities we are presenting. Through our Research Boards we have enlisted the service of noted educators who are assisting in solving the many problems confronting us. Through our Committees and the efforts of individual members, we are acquainting undergraduates of technical schools with the attractive opportunities that exist for employment in our industry, and while we have not at this time sufficient funds to support financially the several Gas Engineering Chairs founded by our Affiliated Associations, we are thoroughly in accord with their plans and will do what we can to aid in their success.

Reports and Papers

Do we study and take advantage of the mass of information prepared each year by our committees and members and presented to the Association in such admirable manner at our yearly meetings? Discussions on these reports are equally illuminating and I strongly recommend that more time and thought be given each year, after the annual meeting, to studying and applying the knowledge thus presented to improving the property and service of our various companies.

I have attended many sectional and State Association meetings and have listened to some able papers, and I have also listened to papers hastily prepared from incomplete data and conclusions drawn that were not justified. How much better it would have been for the men present, many of whom were unable to attend the Annual Convention, if the author had taken one of the reports or papers of the American Gas Association and presented and discussed a subject that had been prepared by a selected coterie of gas men, skilled and experienced in the subject matter treated.

Place of Annual Meetings

The annual meetings of the Association have now been held in the East for three consecutive years. It was the wish of a large majority of its members that this be so. The East, particularly Atlantic City, has offered many advantages for all the essentials and comforts of a large gathering that are not to be found in many cities; still it is essential that meetings be held at other points where our membership, particularly those in the Central West, may attend without undue expense and the many discomforts of long distance travel.

Sectional and State Association gatherings, practically all of which are affiliated with the American Gas Association, provide opportunities for many employees of our company members to gather together to discuss our problems, and offer occasions for social intercourse, but we must not think that these gatherings will take the place of our annual conventions. They do not. The wonderful exhibition of apparatus and appliances provided by our Manufacturer Members is missing, and this fact alone must be given due consideration in selecting locations for our annual meetings.

It is well known that a large percentage of our membership is located east of the Ohio, and eastern conventions are most largely attended, but other cities must be able to offer adequate facilities for our meetings and other national societies have held successful meetings as far west as the Pacific Coast.

In conclusion, I want to express my pleasure and appreciation at the satisfactory way the affairs of our Association have been handled by our able and courteous Secretary-Manager Alexander Forward and his most efficient staff. Mr. Forward, while new in association work, has ingratiated himself in the hearts of all the members who know him. He has continued in the steps of his predecessor in advancing the Association's affairs in all utility problems and every member of the staff has worked with him with a spirit that assures success to our Association.

Advertising

The need for advertising coke to sell it

W. G. Rich

Manager Coke Sales Department, Providence Gas Company

ARTHUR BRISBANE says: "The rainbow was the first great advertisement. It had position. It had color. It held out a promise of benefit in effect, 'I shall not drown you again if you behave.' And then it had the value of repetition, because it is repeated in the same position and color and promise after every rain.

"The next big advertiser was Caesar, when he wrote on the walls of Rome for the people to read just what the senators were doing in the senate chambers. These advertisements of old contained the elements necessary in all great advertisemnts, which are:

"Advertising must be seen; it must be read; it must be believed; it must create a want.

"Advertising is different because you must make the man stop thinking as he thinks and make him think as you think and interest him in the thing that you are interested in. It is easy to interest a man in himself. If your advertising convinces him that it is good for himself, you have him sold."

"We Do Not Have to Advertise"

Several months ago I wrote to all the gas companies in the United States who produce and sell coke, requesting certain information about their coke advertising and copies of same. I was not surprised in receiving reply after reply stating, "we do not advertise" or "we do not have to advertise." The coke business of the average gas company certainly shows these facts.

It is not much wonder the "coke business" with the gas company is what it is. Frankly, it never will be any different until the gas companies who produce coke awaken, stand on their own feet, and speak in no uncertain language as to the merits of coke as an ideal domestic fuel.

The gas company "who does not advertise its coke" is asleep, and the other companies "who do not have to advertise their coke," are almost, if not as bad, as the company "who does not advertise," for that company is generally the one which produces an inferior grade and badly prepared coke and is satisfied with any price for which the coke may be sold—such practice only demoralizes the price, and creates the thought in the consumer's mind that "coke is a cheap fuel." Coke is not a "cheap fuel" nor a "substitute fuel." It is up to every gas company to proclaim from the house-tops these facts. Always bear in mind "coke is no cheaper than what you make or consider it."

Advertising the Life Blood of Business

Advertising is the life blood of any business—it touches all consuming sources in every community.

How true this statement is! Does the average gas company realize this truth? I think not, for if they did, their coke business would be further advanced than it is.

Get away from the principles and practices laid down by the gas companies a decade or two ago, that because you are a public utility, the public knows you are in the city—located in the same old spot—and when they need you they will be compelled to come to you.

Reverse these conditions. You go to them, in your local newspaper, and tell them the many merits of your coke as a domestic fuel in brief, concise statements which are true and can be backed up, if necessary. You don't have to make apologies for your coke if it is of good quality and if every effort has been made to make it what it should be—spread the news, persistently, of the coke you produce.

Business Dies When Advertising Ceases

Don't take it for granted that the other fellow knows all about what you have. Few of us ever know enough and many of you never know anything. Don't be afraid to keep on telling your local community what you have—you have got to keep it up. If you stop a man's heart he dies. If you stop advertising, business dies.

The gas company that does not advertise its coke is like "the baseball player who always held his bat on his shoulder"—he never made a hit. Swing the bat "Advertising" hard into your local newspaper—you will make "a hit," and results are bound to follow.

Know your coke, personally, as the best solid household fuel; believe in it. Advertise, advertise and advertise it some more until your community knows it—not as a substitute for other fuels, but as a dependable fuel produced in your own city.

"Keeping everlastingly at it, brings success"—so in advertising, to make it a success—keep at it! keep at it! keep at it! Persistent advertising counts.

Go to the advertising manager of your local newspaper. Tell him what you have in mind as regards the merits of your coke as a household fuel. Secure his co-operation—you will always find him a genial person and he will be very glad to assist you in every possible manner.

In my paper which was read before the American Gas Convention of the year 1922, I referred to several other advertising mediums, such as the monthly gas bill—telling a new story about coke each month; circular letter—making them just as personal as possible; booklets, bill boards, advertising novelties, etc., etc.—all of these, if properly handled, are helpful, but after everything is said and done you will find your local newspaper your mainstay—it is the best of all advertising mediums.

For your own satisfaction, this coming fall and winter, try out over a period of ninety days, a three, four or five-inch single column "ad" in your local newspaper. Have it inserted daily on first, second or third page; change your copy three times a week, giving the public, whom you serve, a brief story on the merits of coke for heating the home.

You will be surprised at the interest taken, the inquiries you will receive, and the increased tonnage of coke sold both to old and new customers. Try it.

Do not sacrifice price—improve your coke in quality and preparation. Spend a reasonable amount, per ton, for advertising and the feature of price will take care of itself.

Show me the gas company who advertises its coke persistently, and I will show you a gas company which both disposes of its coke and obtains a good price for it. Besides, such advertising will not do your company any harm from the standpoint of general publicity.

DISPATCHING THE COMPANY'S COKE TRUCKS

V. A. Miller, Rochester Gas & Electric Corporation, Rochester, N. Y.

(Due to lack of space, this section of the report had to be omitted.—Editor.)

*How is Industrial Gas to Develop?

Adequate recognition of industrial gas department prerequisite to its final success

W. M. Hepburn

ANY article which attempts to cover factors governing the development of industrial gas must necessarily be based on predictions and not past history. Industrial gas is still in the pioneering stages. Today we are in our shirt-sleeves, engaged in pulling out the stumps and making a

W. M. Hepburn

clearing. We have not yet reached a stage where cultivation is beginning to bear fruit. We are prone to look on our industry as an old and established one. As history shows, the use of artificial gas dates back to 1792, when Wm. Murdock conceived the idea of utilizing illuminating gas as a substitute for lamps and candles. However, this gas was for lighting purposes. Not until 1895 was any effort made to popularize the use of gas for cooking. As far as industrial gas is concerned, we only need to look in our midst of pioneers for industrial gas business, such as Mr. Cauley of Chicago and Mr. Tuttle of Newark to realize how recently this industry started.

The first gas company charter in the United States was in Baltimore in 1816. In the next few years we find lighting companies formed in Boston, New York, Brooklyn, Bristol, R. I., and New Orleans. Today the artificial gas industry in the United States supplies 8,500,000 customers, and these customers are using annually 300,000,000,000 cu. ft., and 1,200 plants, representing an investment of four billion dollars, are required to meet this demand. Such figures are surely convincing that the industry itself is established so that our industrial gas problem is a more difficult one of blazing new and different trails and in making these trails available for the use of an industry which has already progressed to gigantic proportions.

Only Manufactured Gas Has Permanent Supply

During the past year there was a tremendous increase in all fuels and electricity for heating. Next year there will be a still greater increase, but you will notice the more rapid the increases the more predominating will be the manufactured gas. Manufactured gas is the only primary fuel now available that holds forth absolute assurance of lower prices and, more important, a permanent supply.

One-tenth of the total oil which has been used to

*Delivered before the meeting of the Industrial Section, A. G. A., Atlantic City Convention, Wednesday, October 15, 1924.

date was consumed during last year alone, and authorities agree that our oil supply is about one-half exhausted. Oil, however, furnishes less than one-third the heating requirements supplied by coal.

Within the next three years the economic influences are bound to cause an upward trend in the price of fuel oil to a degree which will necessitate a decided curtailment of its use as a fuel.

Economic Waste With Raw Coal

The use of raw coal as a fuel is beginning to be given serious study and publicity. The economic waste is beginning to be interpreted in savings available. There is scarcely a magazine, newspaper or periodical which has not run recently a series of articles on this subject. The fact that it is wasteful will not cause its correction, but the amount of attention it is receiving at present will cause activities and developments which will make its gasification with by-product recovery very profitable.

The use of electricity as a heating medium for industrial work is uneconomic in spite of its convenience and its high efficiency in the final transformation from current to heat. Super-power will never take care of this uneconomic condition, in spite of all oratory from our politicians, because if every stream in the country was harnessed we would only generate a small per cent of our present power requirements.

Natural Trend Towards Gas

We, therefore, face an overwhelming natural trend toward industrial gas. The question which concerns us is not whether or not gas is the logical and ultimate fuel. We certainly have every indication that we can take this for granted. The question is, are the gas companies going to be in a position to take advantage of it, or will the nature of their growth and present loads so handicap them that this business will by-pass them and be taken care of by other means. Today the field is an open one. The present by-product recovery plants are not available for the smaller or average size manufacturer. The manufacture of gas is the gas company's specialty and the opportunity is theirs if they see fit to go after it. If they wait for it to arrive, it will certainly glide by as serenely as a jitney passes a trolley car. The future progress of the gas industry will be measured by the progress in industrial loads. It is surely a problem worthy of considerable attention. We feel that the equipment manufacturers are an important factor.

Industrial Gas Equipment

The past year has not disclosed many dramatic developments in gas burning equipment. In this case it is a healthy symptom. Industrial gas has progressed beyond the point where any ingenious invention or application can have any more effect than contributing a certain share to the general progress. In any event, it will not be revolutionary. There are certain fundamentals which should be kept in mind and by so doing we can keep the proper perspective on all component and contributory phases. For example, in annealing steel or firing ceramics, the act of gradually heating and cooling the work causes the desired change in the structure. The fundamentals connected with such an operation from the furnace point of view are to convert the gas into its most effective form and to loan this heat to the work. We must first cause the combustion to occur in its most efficient form. Gas is most efficiently burned when it is mixed homogeneously with the exact proper proportions of air and the combustion made to occur as instantaneously as possible. This is taken care of in the design of the mixers, burners and combustion chambers. To insure that the operation is continuous at the maximum efficiency, these conditions must be synchronized and locked so that they are not dependent upon the particular operators. This is accomplished by making the proportioning automatic such as is done by a number of the gas-firing systems.

Heat Developed Must Be Put to Work

Next the heat generated by this combustion must be imparted to the work. By making the furnace continuous, i. e., feeding the work in one end continuously, a comparatively long approach can be built from the inlet door to the heating chamber and the hot flue gases from the heating chamber can be drawn toward the inlet end and made to give up all their sensible heat to the incoming cold work. The outgoing flue gases preheat the incoming work, and in this way the greatest possible amount of heat created by combustion is absorbed by the work. After the work has been held at the critical temperature for the length of time desired in the heating chamber and maintained by an automatic temperature control, the operation is reversed, i.e., the heat must be extracted from the work.

As the operation is continuous, the work progresses through the furnace in one direction. Therefore, a comparatively long cooling chamber is provided, extending from the heating chamber to the discharge end. In order to reconvert this heat to a useful form the cooling chamber is provided with recuperators. The recuperators are some form of enclosed duct through which the air destined for combustion is forced. In its travel through the recuperators it extracts a considerable portion of the heat which has been imparted to the recuperators by the heat radiated from the hot work. This type of installation illustrates the ideal combination of the various forms of gas-firing equipment. When the furnace is well constructed with heavy insulation, the recuperators of an efficient design and the combustion automatically controlled, all of which are

possible today, there is fundamentally little improvement in combustion methods left for posterity.

New Equipment Being Developed

There are many forms of heating operations which cannot as yet be adapted to this type of firing. The manufacturers are, therefore, applying themselves to the development of equipment which will enable the greatest possible combination of these fundamentals to the present day heating operations. The developments are not revolutionary or dramatic; they are of a general combining. Recuperation is fundamentally correct and yet its economies can be dissipated at the very start unless it is linked with firing equipment which automatically controls the combustion. These two fundamentals have been successfully joined during the past year. This combination is further linked to automatic temperature controls, which, in turn, enable the entire furnace to be as accurately maintained at predetermined temperatures as the most expensive type of electric installation.

In some forms of heating the atmosphere in the furnace has a decided influence on the quality of the product. Here, again, gas has the advantage. Without exception, the finest quality ware requires an atmosphere which can best be supplied by some form of gas. There is not an electric furnace made which can turn out steel free from scale unless some form of gas is injected in the atmosphere. Gas can be converted to the same form of heat as that supplied by electricity and at the same time a portion of it used for controlling the atmosphere. Equipment has been perfected this last year which will enable any type of atmosphere to be maintained within the chamber and the furnace operated entirely with gas.

Labor Saving.—These developments are a general connecting up of isolated spur branches into a multi-track trunk line that will enable the handling of the heaviest traffic. With these combinations developed in their most available form the interpretation of gas in terms of the customers' product can be undertaken by the furnace manufacturer along the lines of labor saving. There is no end to the variety of conveyors and labor-saving devices which can be utilized on furnaces when the efficient standardized firing applications are so flexible.

The Self Interest of the Parties Concerned

These developments are being promoted by the manufacturers because gas inherently embodies these advantages and because they appreciate it is an economically sound fuel. It is no philanthropic move on their part to develop the gas company's industrial load or to conserve the nation's resources. The satisfaction which attends that phase is incidental and is not the actuating move. Approaching the subject of how the gas companies and the equipment manufacturers can best work to their mutual interests, it is always well to recognize that in all questions of policy, self-interest is the determining factor. Therefore, it is necessary to analyze the self-interests of all parties concerned.

Industrial gas concerns three distinct parties:

1—The consumer.

2—The gas manufacturers.

3—The gas equipment manufacturers.

The Consumer

The consumer we can consider as a disinterested party. There is no commodity in the world so generally used with as little interest and knowledge displayed on the part of the users as gas. One of the gas companies in their endeavor to better serve the community recently installed new equipment, including a holder. In a patriotic attempt to protect his townsmen, one of the citizens came out with an article and pointed out that when erecting this new holder it would contain air, so that when put in operation the citizens would be supplied air for which they would be charged at the regular rate before gas reached them. This case is typical of the extent even educated people interest themselves in understanding this commodity. In any event, we must realize the burden of solving this problem rests entirely on the last two parties, namely, gas manufacturers and gas equipment manufacturers, and, on the other hand, our general problem is to interest ourselves concerning the consumers' problems and in solving these in terms of gas. From an engineering and manufacturing standpoint, if these features are properly handled, the consumer will willingly follow the plan laid out for his benefit.

The Gas Makers and the Equipment Makers

How can gas manufacturers and gas equipment manufacturers help each other in solving this problem. As we have very little past prestige established, this subject is more or less open. With this in mind, I have written some forty industrial equipment manufacturers to get their opinions on this subject. These manufacturers were asked the following questions:

1—Do you consider the situation one that can be benefited in any way by the publicity or influences exerted through the association.

2—Can gas companies be of service to you in marketing and further developing your products.

3—Do you think the American Gas Association is one that can be utilized as an association for gas equipment manufacturers in much the same way as, for example, the Society of Refrigerating Engineers is utilized by the refrigerating engineers, or do you feel that a separate association would be necessary to obtain such benefits and protection.

4—What have been your main advantages and difficulties in dealing with gas companies.

5—What are your suggestions for best methods of increasing the advantages and of overcoming the difficulties.

One Reply

The following extract is taken from one manufacturer's reply and is fairly representative of the answers received from the others:

"In this discussion we are confining ourselves to the industrial end only, and not the domestic.

"The interest of the furnace manufacturer is very simple to define. It consists in selling for profit at a price which will net the maximum return. The interest of the gas company is not so easy to determine. Primarily, it should be to promote the sale of gas. However, in recent years some companies have striven to establish an industrial department that would be self-sustaining and have insisted on a good margin for all appliances sold. Other companies have even gone further and have striven to make the industrial department not only self-sustaining, but profitable.

Analyses of the Policies

"Now let us analyze these three policies and try to find out what the result is. If a gas company endeavors to sell industrial gas solely, it can devote its entire time to that purpose. Its sales engineers can get more intimate with the manufacturer if the manufacturer does not think that he is trying to sell him something. He can devote more time to gathering information that pertains to the more efficient use of fuel and he can act more as a consulting engineer in helping the manufacturer better his processes. At the same time the manufacturer of these appliances selling direct has more margin to pay for engineering service, getting out on the job and selling the goods, and making it work properly after it is sold.

"We believe that it has been the policy of most electrical companies to follow this very plan. They have devoted their entire time to the sale of power and furnaces without handling the sale of the appliances themselves. We need only to look at the immense strides which the power and furnace end of the electrical industry has taken to realize that their policy must have its advantages.

Making the Industrial Department Self Sustaining

"Now if we consider the second policy, that of making the industrial department self-sustaining, we come into a different set of conditions. Here we find an industrial manager striving to the utmost to get a large enough margin of profit to make his department self sustaining. This means that he will often endeavor to make his own appliances, which may or may not be the last words in combustion efficiency. It means that if he buys his appliances from a manufacturer he will try to get such a discount as will make it impossible for the manufacturer to devote many of his resources to either development or service. It may also encourage him to develop furnaces for other fuels than gas. We think that this policy has been more or less prevalent among the companies for the last decade and we do not think that it has resulted in the maximum good for either the gas companies or the manufacturers.

Making the Industrial Department Profitable

"The third policy is the natural outgrowth of the second. In this we find the industrial manager striving not only to make his department self-sustaining, but profitable. In this case, through ability and favorable circumstances, the department may have become self-sustaining and the natural ambition is to make it profitable. Here we find the manufacturers being forced through competition and all sorts of pressure to give bigger discounts. This inevitably generates a feeling of bitterness on the part of the manufacturer, who realizes that his sole profit lies in the sales of appliances, and there is little chance for continuous repeat orders, while the gas company has the gas consumption, which we presume is sold at a profit, for an indefinite period.

"These subjects are old and hackneyed; they have been discussed time after time, but the principles are just as true now as they ever were and some time they will be recognized by all and the proper remedy applied. When an industrial department endeavors to become profitable, we believe that the sale of gas for industrial purposes is bound to suffer, and we believe that the manufacturers must in self-defense combine to protect their interests.

"Whatever the policy of the gas company may be, it is something which must be decided by the directors. It cannot be decided by the industrial managers or even the operating officials. The subject is entirely too important and too deep.

Using the A. G. A.

"We believe that the American Gas Association can be utilized by the manufacturers with greater benefit than could possibly accrue to them if they form a separate association. There are too many associations at the present time, with their conventions, overhead, etc. We believe that the whole country would be better off with fewer of them.

"To sum up, we believe that there is a wonderful opportunity for a vast expansion in the use of industrial gas equipment. We believe that the gas companies should concentrate on the problem of selling gas for industrial purposes and should co-operate with all the manufacturers of reputable gas equipment in the sale of it. We believe that they should in the main turn over the actual sale of ap-

pliances to the manufacturers direct or their representatives and these representatives should co-operate with the gas companies to the fullest extent in promoting the sale of gas and giving expert service on equipment which has been installed. With this policy in effect, there are no points of friction, and the greatest harmony should prevail. The principal interests of both manufacturers and gas companies would be served."

Helping the Manufacturers

Last winter, during a sales convention in New England, considerable was said regarding the general policy of helping the manufacturers. One of the gas company representatives, referring to this toward the close of the meeting, stated that he was tired of hearing that general plea and that when any of the manufacturers proved they would utilize such assistance for the benefit of the industry, he would be willing to contribute, too, but that up to date he had not seen the manufacturer make any move in this direction. The manufacturer does not want to be subsidized by the gas company or any one else and if such subsidy was given it would do the industry more harm than good.

Industrial Load Built on Engineering Expense

I do not consider, however, that the appliance manufacturer is asking any favors when he seeks to have the gas company recognize the value of an industrial load and to base their profits on this factor rather than try to maintain an industrial department at the expense of appliance manufacturers. Industrial loads are obtained fundamentally by engineering expense, not by merchandising profits. The history of the companies who have adopted the engineering policies for their industrial departments, even in the short time they have been in operation, clearly prove that it is the proper basis. One of the reasons the old discount system is still continued is due to the position occupied by the gas equipment manufacturers.

Doubtless many of the gas companies feel that if they had organization like the General Electric Company, which they can depend on for equipment and development, it would be worth their while to concentrate solely on industrial gas and forget the equipment end of it. This sentiment has a far-reaching effect. One or two of the larger companies maintain types of industrial engineers who necessarily become very proficient in the design and utilization of the gas-firing equipment. Very often these men can, due to their geographical advantage, make more advantageous installations than the gas equipment manufacturer himself, and such cases they feel would be pure charity to turn over to the gas equipment manufacturers. These gas company industrial men can put in a good installation and one that will make a good showing. On the other hand, if they utilized exactly the same amount of interest and energy to assist the manufacturer in making the original installation, similar installations would be spread over many cities in the country and would firmly establish the use of gas for that particular industry. Where this policy is in general effect, it is bound to be retroactive for that particular city in other industries which have been similarly developed built up in other cities.

Maintaining Efficient Standards

Last summer I was requested to call on a baker who was about to open a new bakery to see if we could not induce him to use gas. It was my first experience with a New England baker, and if any of you gentlemen are interested in knowing the results, experiences and opinions of each individual baker in the United States using a reel oven, you should get in touch with that man. He has acquired a library on this subject. This correspondence was unanimous in discouraging the use of gas. The conclusions from these letters only confirmed his own opinion, as he had had considerable experience in the use of gas. Upon further questioning, we found he had used natural gas when it was sold around 20 cents a thousand and had used a modified form of an atmospheric burner. He was basing his conclusion on the amount of gas used with that burner. Our statement that an efficient type of application would greatly reduce the amount of his gas was prejudiced sales talk, in his opinion, while the existing practice throughout the country was the indisputable and deciding facts. Here we find closer liaison and more effective co-operation, even without any organization between these bakers than we have between ourselves in this big American Gas Association.

Standards for Equipment

Is it possible to establish a certain standard for equipment and to see that that standard is adopted all over the country? I do not think it is practical at the present time, but the same results can be most nearly attained if each of the gas companies who were interested in some particular application such as a reel oven would make it worth while for a manufacturer to solve this problem. When this is done, the manufacturer will naturally investigate all bakers on this work in the country, and he has a real incentive to further the use of the equipment which he has perfected and standardized.

Compare this situation with the electric installation. Last month a large steel casting manufacturer dismissed our proposition on a gas-fired furnace for the reason that the trade specified electrically annealed castings. The trade has come to recognize that "electric annealed" is merely a short term for a standardized high-grade anneal. Gas annealed does not mean anything. It might be better than electric or it might be worse than coal annealed.

Electricity necessitates an efficient and standard design. The abuse of gas in furnaces will redound against the use of any trade specification for many a day. It is the gas companies' product, not the equipment manufacturers', that is being abused, and the burden of correcting these conditions rests with the gas companies.

Conclusions

The idea never occurs to a large percentage of manufacturers that the fuel which is supplied their home could possibly be used for their factory operations and, furthermore, it requires a most expensive series of proofs to inculcate such an idea. When gas has been finally brought to the point of serious consideration it then goes through the second stage, that of comparison with other fuels. It is found to be in a tremendous competition. Gas is the only fuel which is in competition with all other methods of heating. Oil and electricity are not in competition with each other. Each has its particular characteristics and depending on which of these characteristics, cheapness or quality, is most desirable, determines which should be used. Not so with gas. Put it in a pair of overalls and a leather apron and it will outforge any blacksmith of any color; dress it up in a white uniform and sanitary mask and it performs the most skilful of operations and, what is more, the patient recovers physically and financially.

However, the prevailing conditions affecting industrial gas to date necessitate a very careful analysis of the particular application on the part of the gas company and manufacturer if the customers' best interests are kept foremost.

Problem Should Be Undertaken in Scientific Manner

When the problem is undertaken on a scientific and systematic basis, the self-interests of three, customer, gas company and manufacturer, are combined in one. A careful and detailed survey is made in the customer's plant in co-operation with customer. All existing costs are accurately determined and plant methods studied. A comparison of all available fuels is then drawn up. The various operations then allocated to the fuels showing the greatest saving in finished product.

Gas companies in possession of such detailed reports for all their major industries are then in a position to budget their potentialities and to go after their industrial load on a business-like schedule.

The manufacturer's experience in the allied industries is invaluable in such undertakings. The manufacturer can accurately guarantee the operating figures on the equipment when an opportunity is afforded to study the requirements in such detail.

Industrial Gas an Engineering Proposition

I have stated that industrial gas was an engineering problem. At least, the foundation for it is an engineering problem and such a means of building it as surveys afford is, according to all our experience, the most reliable way.

However, it is only the foundation. All suggestions, opinions and ideas regarding methods of building up beneficial relationships between gas companies and manufacturers will have little effect unless the importance of industrial gas is given official recognition.

If industrial gas is as important as we think it is, why does it not receive more active support from the officials of the gas companies? Making due allowance for the other important duties which require the gas company officials' attention is not a large industrial prospect to a gas company akin to a large prospective order for locomotives to the Baldwin Locomotive Company or a large steel order to the Bethlehem Steel Company? Even in these established lines you will find Mr. Vauclain or Mr. Schwab on hand at such occasions.

We are pioneering without the guidance of precedent or confidence of experience and the success of our undertakings depends on the ability of the individuals in meeting the particular occasion, usually emergencies.

Gas as a fuel for water heaters and ranges is established. Standard merchandising policies are effective. This is not the case with industrial gas. Often the customer has to change his method of operation to use gas, the equipment manufacturer has to draw up special designs or invent new ones to apply gas and the gas company has to depart from the established practices in selling, supplying and even manufacturing their product. This means that the man actively handling the industrial department should have authority equal to an officer of the company in shaping the general policies.

It is an engineering problem to obtain and present the facts. The analysis and solution of these problems involves considerably more than the engineering aspects. From the equipment manufacturer's point of view, the next important step toward our industrial gas ambition is to have the gas companies' industrial departments established on a basis commensurate with their potential earnings.

*Gummy Deposits in Gas Meters

Causes and prevention

(A Collected Report)

†*Ralph L. Brown*

Introduction

IN the following pages it is proposed to give an assembled report of various phases of an investigation on the occurrence, cause, and prevention of deposits of a gummy nature in gas meters.

The occasional occurrence of gummy or resinous deposits, often accompanied by stoppages, in pipes and meters has long been experienced in the distribution of gas. Beginning about 1917, the occurrence and accumulation of such deposits, particularly in consumers' meters, began to assume serious and troublesome proportions. The deposition grew until a peak was reached for the industry in general about 1922. Since that time, when this investigation by the Bureau of Mines, in co-operation with the American Gas Association, was instituted, the trouble has largely diminished until there is little being experienced, or at least being reported.

Ralph L. Brown

The deposits were not confined to plants in which gas was being scrubbed for the recovery of benzene and toluene for war purposes, and they were not always present in the meters and distributing systems of those whose gas was scrubbed. Within the experience of the investigators, the difficulty is to be found where the gas distributed is, in part at least, carburetted water-gas. It occurred in systems in which distribution was effected under all pressure from a few inches of water up to 40 pounds. The occurrence was not confined to any one section of the country, nor to installations of any single type.

Cause of Trouble

The trouble resulting from the gummy deposition was caused by its accumulation in the valve chambers, faces, and seats, on the walls and bottoms of the lower spaces of the consumers' meter. Perhaps the most serious manifestation was the accumulation of this gummy material on and in the leather diaphragms of the meters. It cannot be removed, and the leather becomes hard and brittle, and cracks, following contact with the air, as when opened for repair. In many instances, destruction of the fiber and disintegration of parts of the diaphragm have taken place. Particularly is this true in dipping diaphragm meters. To a lesser extent, difficulty was encountered in those systems in which compression and high pressures are employed in the distribution of gas, in the sticking of regulators or governors by gummy deposits, even many miles from the generating stations.

Statistics on Trouble

The magnitude of the trouble may be illustrated by the approximate statistics for one city system: in this case a considerable amount of corrosion was occurring both coincidentally due to corrosive constituents of the gas and by consequence of the gummy deposits. The figures are as follows:

Year	Meter removal	Remarks
1918	32,000	About normal.
1919	47,000	Troubles began in November
1920	69,000	and reached its annual peak
1921	86,000	in January and February.

However, practically all those meters in which the corrosion necessitated rebuilding were also so badly gummed that rediaphragming was also neces-

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sary. In other systems, serious amounts of deposits were present when practically no corrosion was found.

In the case for which the figures are given, the percentage annual removal at the maximum was about 22 per cent. In another city, similarly troubled, the annual meter removal approached 30 per cent, of which practically all had to be dismantled, cleaned, rediaphragmed, and reassembled or rebuilt.

Effects of Deposits

The effects of the deposits were found (1) in pipe stoppages; (2) in meters that did not pass gas or ceased to record, that were badly worn due to increased friction in mechanism parts; (3) in increased complaints; (4) in increased labor and maintenance items; and (5) in unpaid for and unaccounted-for gas, all of which were expressible in distinctly economic terms, specifically in costs.

Original Status of the Problem

At the outset of the investigation, the multitudinous factors which were apparently or possibly entering into the formation and occurrence of these deposits had led the industry into a maze of contradictory belief and opinion. Information and misinformation, general and special conditions, major and minor factors, and primary and secondary influences had been woven into considerations of the problem. In short, the collected evidence available, elimination of the deposits, was quite chaotic. as well as the state of opinion as to the cause and

Object of the Investigation

The object of the investigation was to find the cause of the deposits and the means of eliminating future depositions of this character; the nature of the deposits being such that, once present, the dismantling and rebuilding of the meter remained the sole means of removing the deposit. Being fundamental, the composition and causes of the deposits were made the first phase of the investigation.

Analysis of the Problem

The fact that the deposition of the gummy or resinous material (hereafter designated as gums) developed into a serious difficulty during the several years following the war brought into the problem many possible factors. Especially was this true in view of the character of the gum-forming materials. The situation in many plants had been complicated by those conditions, so extremely difficult from an operating standpoint, which obtained during the war and post-war periods. However, it was recognized at the outset that the basis of the deposits lay in the unsaturated hydrocarbons occurring in the gas. In general, it followed that one or both of two factors were operating to produce the gum being deposited. These were, first, that more polymerizable or gum-forming materials were being passed into distributing lines and into consumers' meters, either by reason of its greater production or by its less complete removal, and secondly, more factors were functioning to cause polymerization and gum formation in the distributing systems.

Gas Making Process Considered as a Whole

In order to evolve an organized plan of attack of the problem, that would ultimately render definite these two general premises, the process of gas making as a whole was considered. This was necessary because the existence of gummy deposits obviously depends on the composition of the gas and this latter depends on the process by which it is made. The manufacture of gas consists fundamentally of changing carbonaceous material and carbon compounds of heavy complex chemical structure to simple hydrocarbons or other carbon compounds (plus some H_2). There is an accompanying change of state from solid colloidal matter and heavy liquids to gases containing a small amount of relatively volatile liquids; thus the composition of manufactured gas is fixed by the three prime essentials—fuels or raw material, physical equipment, and operation. Applying these considerations to carburetted water-gas, with which this investigation is chiefly concerned, it is evident that both the composition of that gas, with particular reference to its unsaturated or gum-forming constituents, and the many possible factors influencing gum-formation are based on these prime essentials. The latter had been extremely variable, as stated above.

The Variables In the Reaction

The general unstability and relative ease of reaction of the unsaturated hydrocarbons, and the large time factor involved, rendered it conceivable that in view of the long collective operating experience of the industry, the gum-formation might be arising out of a small and apparently insignificant influence, even one of a catalytic nature. The cost of the deposits to the industry and public rendered it imperative that no such influence be overlooked. In view of the large number of sources of variables (see Figure 1) some means of elimination was sought. By a survey of plants in whose distributing system deposits were occurring, and of those in which there were none, this elimination was sought. Also, for the findings of the investigation to be generally applicative, it was equally imperative that the scope of the study be so broadened.

FIGURE I

List of Variables in Carburetted Water-Gas Manufacture Considered As Possible Factors in Gum Deposition

Composition of Gas

A

Materials

Coal—Sulphur, nitrogen, etc.

Coke—Sulphur, nitrogen, etc.

Steam
oil—
sulphur
base, composition
physical properties
Plant
B
physical
equipment
generator
carburetor
superheater
condenser
scrubbers
reliefholder
tar extractor
purifiers
C
Operation in units under B.
Distributing System

Physical

variation in gas composition
distributing velocity
main temperatures
meter temperatures
time factors

Polymerization factors

purging practices
temperature
rate of oil input
checkerbrick, position
number, spacing spray and oil pressure
time—temperature factors

Chemical

SO_2
H_2S
NH_2
PbS
S
H_2SO^4
O_2
HCl
Fe
Fe oxides
Cu salts
HCN, etc.
CS_2
Leather and contents
Meter or diaphragm oil, etc.

Summary

The results of this investigation are recapitulated in the following summary, in which also appears, in brief, the answer to the four basic questions, which was the purpose of this investigation.

1. Gummy meter troubles are due to the unsaturated hydrocarbons which condense and collect in the pipes and meters; the principal responsible members have been identified and their properties described.

2. It was shown that oxygen was a general factor in gum-formation and subject only to the presence of unsaturated hydrocarbons; other specific and minor factors were mentioned in some detail.

3. A survey of a considerable number of plants was made, and it was pointed out that the presence of gummy deposits paralleled very closely the high rates of oil input, and in general was associated with relatively low-cracking temperatures.

4. A logical and scientifically correct explanation of this observation was offered following that survey, and that explanation had to do with incomplete and non-uniform cracking of oil and the reasons therefor.

5. It has been found that gas oils of different properties cracked under the same conditions give different amounts of gum-forming constituents in the resultant oil gas.

6. Of greater importance is the fact that the variation in cracking temperatures exerts a very marked influence on the amount of unsaturated material in the gas, and specifically on the amount of gum-forming constituents. Confirmatory evidence on the practical side from the survey of 1923 was likewise presented. It has been shown to follow from these facts that incomplete cracking or non-uniform cracking (as evidenced by the presence of gum-forming constituents) result from (1) low cracking temperatures (2) from excessive rates of oil input (too short a cracking period) or (3) from insufficient contact. A combination of two or more of these factors may often be involved. The factors are interdependent and within limits one may give aid to or compensate for another.

7. It has been shown that the average oxygen input in the purifier box is generally in great excess of that actually consumed in the oxide boxes.

8. The composition of the light-oil, including the total unsaturation and styrene and indene contents, from five typical carburetted water-gas plants was studied. The relations of the light-oil composition to the operation of the plant and to meter and main conditions of its distributing system were established. The general principles stated above in this summary were found to hold at these plants.

9. Looking to the prevention of gummy deposits the effects of changes in operation in the cracking units have been emphasized. The influences exerted by the other units of the generating systems on gum-forming constituents and gummy deposits have been briefly discussed.

10. The means of determining and following the degree of cracking have been indicated. The indications of conditions favorable to gum formation and deposition have been enumerated. The data of this report furnish standards for recognizing desir-

able and undesirable light-oil compositions upon which the occurrence of gummy deposits depends.

A limited list of references to experimental work on styrene, indene, polymerization and autoxidation.

Engler 8th International Congress of Applied Chemistry, Vol. 25, p. 661 (1912).

Richter. Organische Chemie, Vol. I, pp. 90 and 323.

Harries. Annalen der Chemie, Vol. 343, p. 365 (1905); Vol. 343, p. 311 (1905); Vol. 374, p. 288 (1910); Vol. 390, p. 236 (1912); Vol. 410, p. 1 (1915); Vol. 383, p. 279 (1911). Journal Prakt Chem., Vol. 64, p. 109 (1901). Berichte d.d.g., Vol. 40, p. 165 (1906).

J. Thiele. Berichte d.d.g., Vol. 41, p. 255 (1908); Vol. 33, p. 666 (1900).

C. Engler. Berichte d.d.g., Vol. 33, p. 1090 (1900).

H. Fudakowski. Berichte d.d.g., Vol. 31, p. 3050 (1898).

A. Klages. Berichte d.d.g., Vol. 6, p. 106 (1873); Berichte d.d.g., Vol. 35, p. 2245 (1902); Vol. 31, p. 1008 (1898); Vol. 35, p. 2633 (1902); Vol. 35, p. 4150 (1902).

Simon. Annalen der Chemie, Vol. 31, p. 287 (1839).

Blyth & Hofman. Annalen der Chemie, Vol. 53, pp. 289-329 (1845).

Berthelot. Bull. Soc. Chem. (2), Vol. 6, p. 294 (1866).

Krakan. Berichte d.d.g., Vol. 11, p. 1260 (1878).

Lemoine. Compt. Rnd., Vol. 125, p. 530 (1897) Vol. 129, p. 719 (1899).

Kronstein. Vol. 35, p. 4150 (1902).

Stobbe & Posnjak. Annalen, Vol. 371, p. 287 (1909).

Sharling. Annalen, Vol. 97, p. 188 (1856).

Stobbe. Jr. Prakt. Chem., Vol. 90, p. 551 (1914).

Weger & Billman. Berichte d.d.g., Vol. 36, p. 640 (1903).

Courtot. Revue Generale des Science, Vol. 34, pp. 607-620 (1923). Gives a lengthy bibliography on indene.

Books

The Non-benzenoid Hydrocarbons. B. T. Brooks, 1922.

Richter. Organic Chemistry.

Lunge. Coal Tar and Ammonia, Part I, 1916.

Oswald. Grundriss der Kolloid Chem., 1st Vol. Erste Halft 1917.

(This report has been condensed very considerably due to want of space.—Editor.)

Customers Accounting

Bookkeeping without books

Report of 1924 Committee

H. F. Frey

Allentown-Bethlehem Gas Company, Allentown, Pa.

THE duties of this committee, as outlined by the Managing Committee, was to keep in touch with the further adoption by member companies of the system of Bookkeeping Without Books, and to obtain from such companies their experience as to

(A) Necessary modifications in original system.
(B) Difficulties encountered, if any.
(C) Savings effected.

Since the activities assigned to us covered but one subject, the committee has functioned as one unit.

The committee also deemed it advisable to treat on economies to be effected by a modern system of payment of meter readers, such as the bonus system successfully in use by several of our company members. After preliminary activities along this line, we were advised another committee was taking up the subject of meter readers from another angle, and our interest ceased after turning over the limited information we had gathered.

To avoid burdening the industry with an exhaustive questionnaire, the following circular letter was mailed to the membership of the association on January 21, 1924:

"Have you adopted or do you contemplate putting into effect the so-called system of Bookkeeping Without Books, which was first inaugurated by the Consolidated Gas, Electric Light & Power Company of Baltimore?"

A summary of replies indicated that twenty (20) companies throughout the country had adopted Bookkeeping Without Books.

Twenty companies stated they contemplated adopting it in the near future.

Nine companies reported as being definitely opposed to the system.

Any one desiring complete details of any one of these systems should apply to these companies.

*Delivered before the meeting of the Accounting Section, A. G. A., Atlantic City Convention, Wednesday, October 15, 1924.

Differences In Systems

Correspondence and investigation by the committee indicates the main difference between various systems, and modifications as operated by various companies (excluding inter-office practice) is that some use the extra coupon detached from the bill as the only office record for liquidation, information and collection.

Some use the coupon in the same manner, but when billing secure a single space revenue and distribution sheet, which is a copy of the bill excluding name and address.

Some use a two to four line revenue and distribution sheet, which is run through the addressograph before billing, this sheet then becomes an exact copy of the bill and is used for all office purposes, the extra coupon being used for collection purposes only.

Some use this latter sheet, and do not make up the additional coupon.

One company reported having used the system for a short time and discontinued it because it did not afford them the complete information they desired, all other companies replying reported no difficulties installing the system, and express gratifying results in the operation.

Savings Effected

The committee is unable to present facts and figures on savings effected due to the limited few companies quoting amounts, the majority of companies admitted economies, but preferred not to quote amounts for various reasons, such as short period of operation, change in classification, recent change in system, only part of situation on new system, etc. The few figures available were not sufficiently representative and might be misleading if presented as representing average conditions throughout the membership of the Association.

In the activities of your committee during the year, we found the accounting machine building companies ever ready to render every assistance possible. They have given freely of their time and money to devise machines to meet the every need of Public Utility accounting. They employ very high grade men, who by their contact in installing the system in various companies, possess and freely transmit to any one contemplating the installation of the system, the benefit of their accumulated information. In recognition of their interest it was determined to permit each one of these companies to submit a system they might advocate to meet our needs, to be included with this report. After being invited to do so and while some submitted systems, they all realized the particular information desired by various companies differed very materially. After each decided they could meet these varied needs it was decided not to publish their contributions, but to advise the membership that valuable suggestions and assistance could be secured by consulting them.

In conclusion, it is the desire of the committee that a similar one be appointed for the ensuing year, not only to act as an advisory board to companies contemplating the installation of Bookkeeping Without Books, but to investigate and draft systems of economy along the many other lines of accounting entering into the cost of the accounting department. Many of the present day methods are generations old and surely some more modern methods are in use at some places, or can be devised by means of which conveniences and economies can be enjoyed.

Bookless Bookkeeping—How It Worked in a Company With 5,000 Accounts

O. E. Wasser, Associated Gas & Electric Companies, Utica, New York

(This section of the report is omitted for want of space.)

Bookkeeping Without Books In Use by the Nashville Gas & Heating Company, Nashville, Tenn.

(This section of the report is omitted for want of space.)

HOUSE HEATING

The Industrial Gas Section of the American Gas Association recently published a reference book on the application of gas to house heating. This book is by far one of the most comprehensive and far-reaching analyses of the house-heating problem that has yet appeared. It commences with an analysis of the house-heating load, indicating the general principles and the desirability of gas-fired house heating, the competition between the various fuels in this field and the variation in the load which must be carried by the gas company. It even takes up in broad detail the relation between combustion and fuels, and, furthermore, goes into the relation of heat transmission losses in the heated houses. It then discusses in detail gas-fired hot air systems, steam and hot water systems. It also goes into the design of individual room heaters, and has some important information to give in the matter of service under the separate headings of "Sales Inspection," "Installation Inspection" and "Service Inspection."

SPECIAL REPORT ISSUED BY GAS STIMULATION COMMITTEE

The Gas Sales Stimulation Committee of the Commercial Section of the American Gas Association has just issued a special report which is concerned with the compensation of salesmen. The report is introduced by the committee in stating that the turnover of salesmen is one of the greatest problems in the gas industry today. It is a difficult matter to obtain and keep good salesmen today. This is a highly important subject, and has considerable bearing on the turnover of men in the sales department.